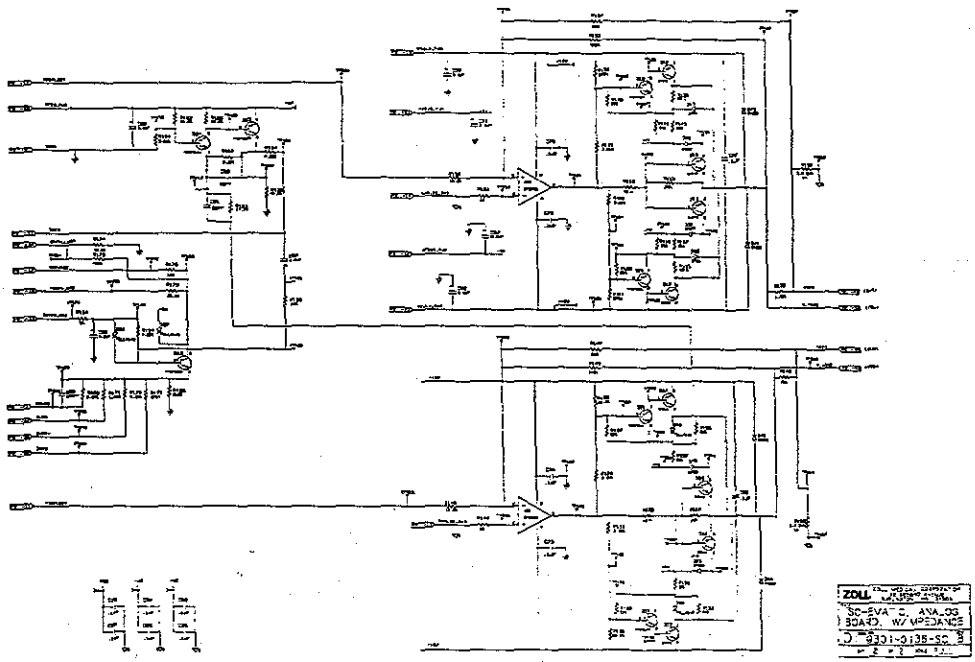
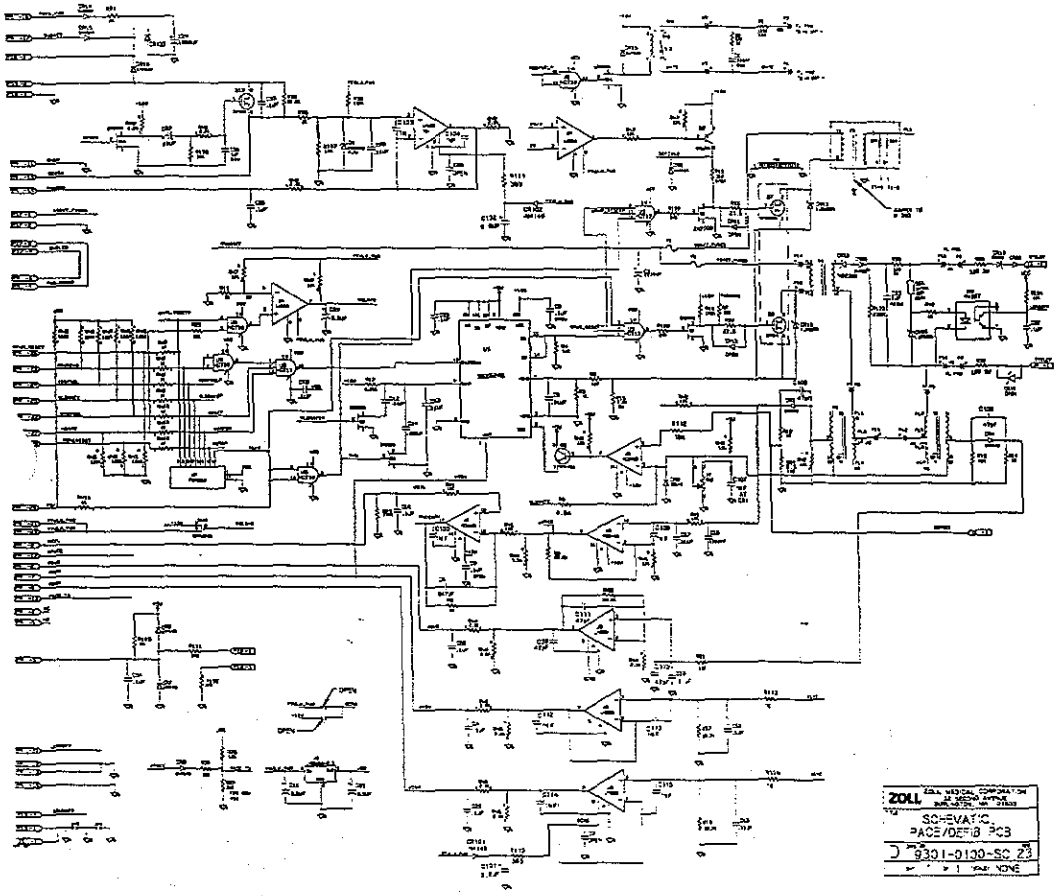
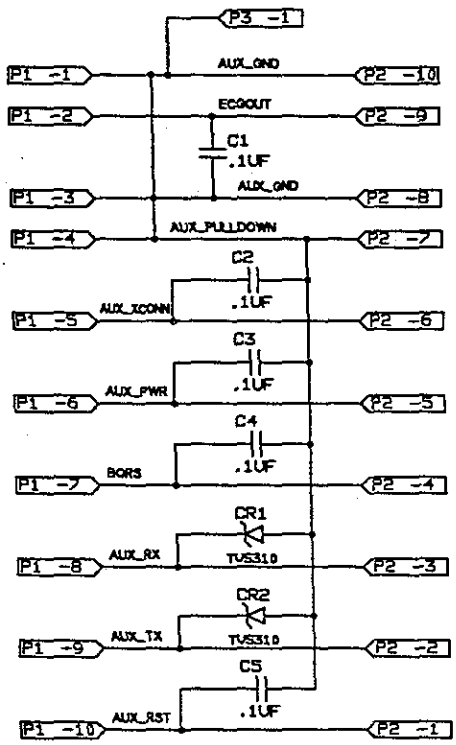
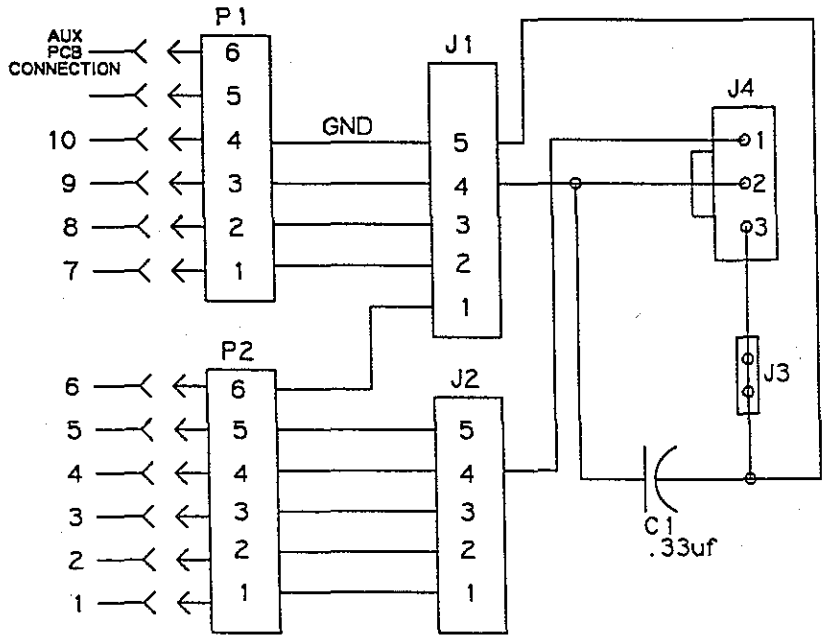

ZOLL
SC-EVA ANALOG
BOARD W/ PEDIATRIC
9331-0138-SC

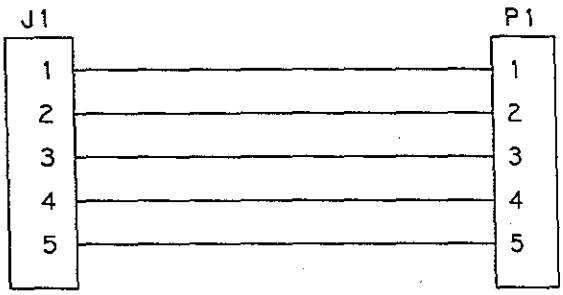

ZOLL
SCHEMATIC,
PACE/DEFIB PCB
9301-0100-SC 23



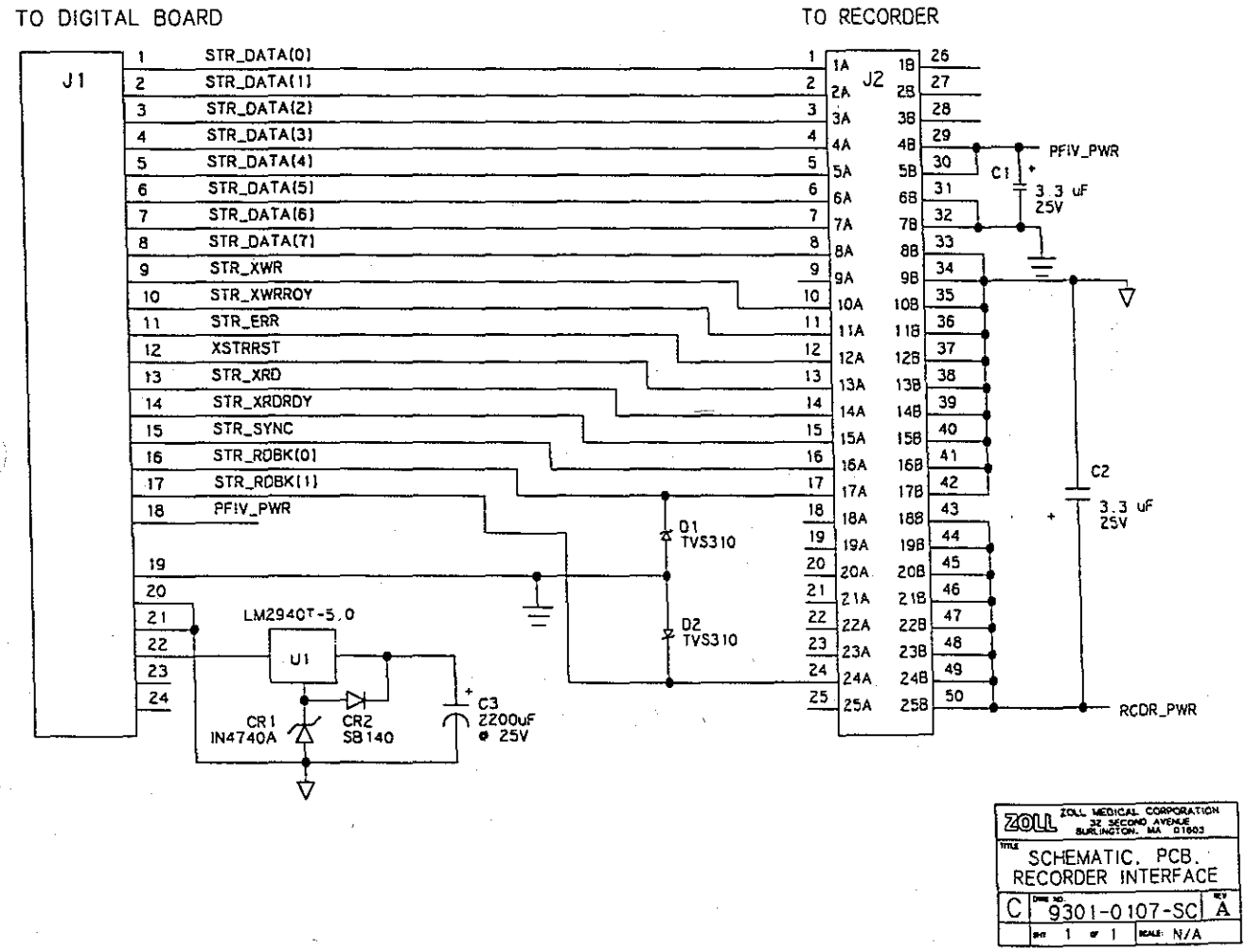
ZOLL	ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803	
TITLE	SCHEMATIC MODULE INTERFACE	
B	DWG NO. 9301-0106-SC	REV A
	SHT 1 OF 1	SCALE: N/A



ZOLL	ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803	
TITLE	SCHEMATIC, PCB MODULE PORT	
B	DWG NO. 9301-0036-SC	REV A
	SHT 1 OF 1	SCALE: NONE



ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803		
TITLE SCHEMATIC, PCB CHARGER PORT		
B	DWG NO. 9301-0027-SC	REV A
	SHT 1 OF 1	SCALE: NONE



ZOLL	ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA 01803
TITLE	SCHEMATIC, PCB, RECORDER INTERFACE
C	DWG NO. 9301-0107-SC REV A
	SHT 1 OF 1 SCALE: N/A

SECTION VI

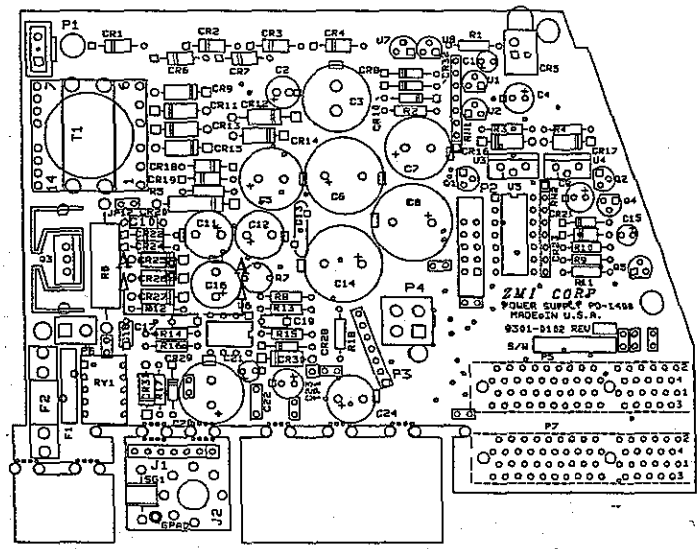
COMPONENT LAYOUT DRAWINGS

PD 1400 component layout drawings are included here to supplement the information presented in:

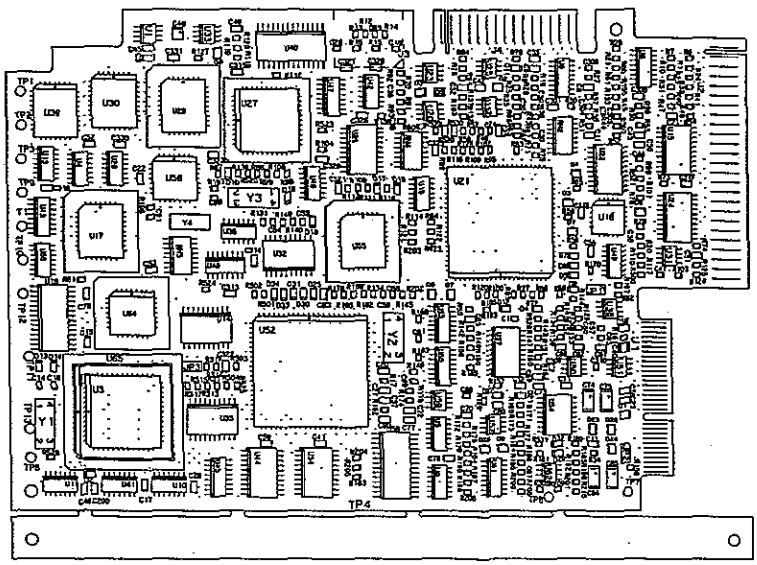
- Section III, Troubleshooting
- Section IV, Functional Descriptions
- Section V, Schematic Drawings

LIST OF DRAWINGS

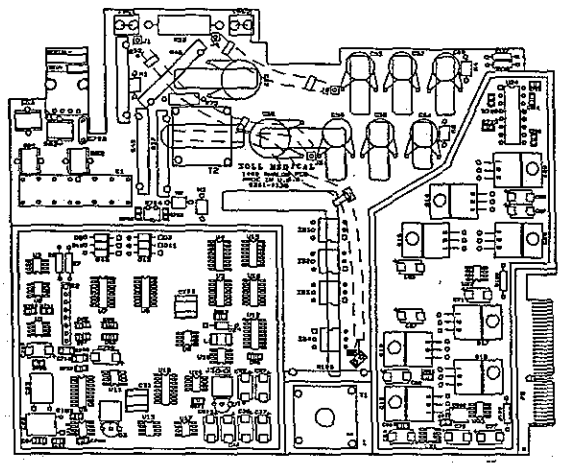
Description	Drawing No.	Page
1. Power Supply	9301-0102	VI-3
2. Digital Module	9301-0138	VI-4
3. Analog	9301-0136	VI-5
4. Pacer/Defibrillator	9301-0100	VI-6
5. Module Interface	9301-0106	VI-7
6. Module Port	9301-0036	VI-8
7. Charger Port	9301-0027	VI-8
8. Main Cable	9500-0202	VI-9
9. Recorder Interface	9301-0107	VI-10



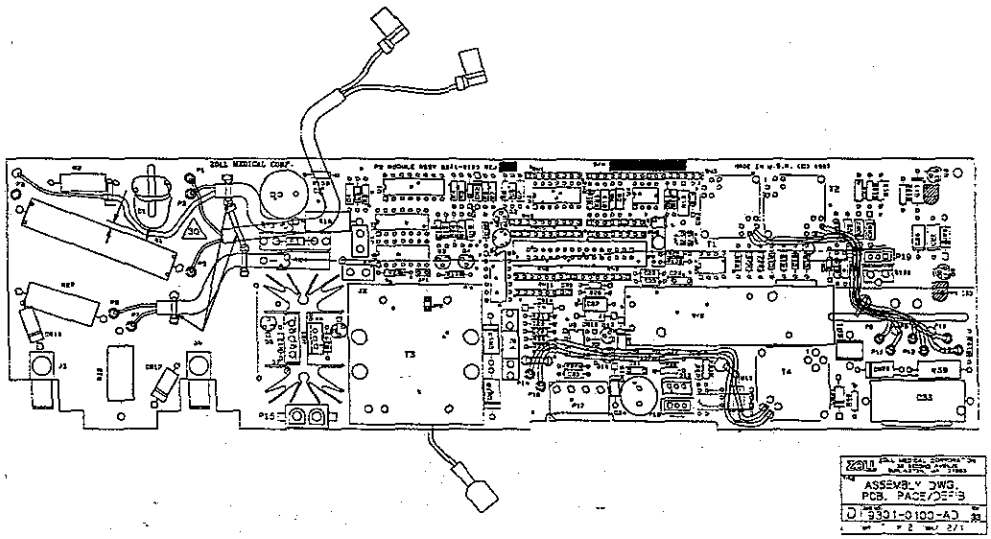
ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803		
TITLE: ASSEMBLY DWG. POWER SUPPLY PD-1400		
D	DWG NO. 9301-0102-AD	REV A
	SHT 1 OF 1	SCALE: 2/1

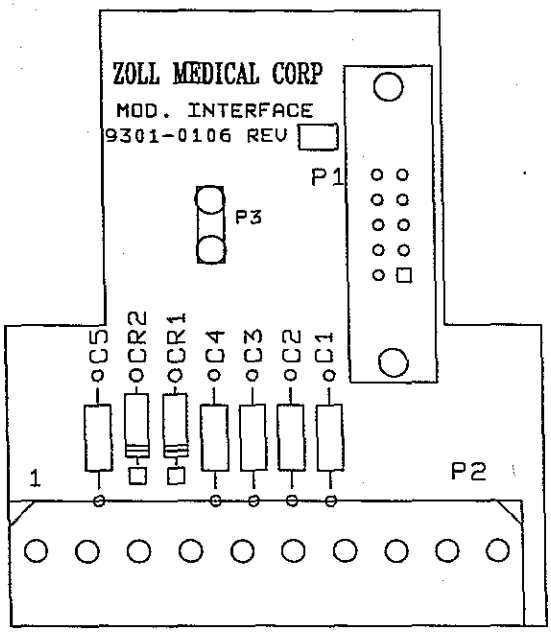


ZOLL MEDICAL CORP.
TITLE ASSEMBLY DRAWING
16 MHZ DIGITAL BOARD
D
DWG NO. 8301-0138-A0
REV A
SHT 1 OF
SCALE:

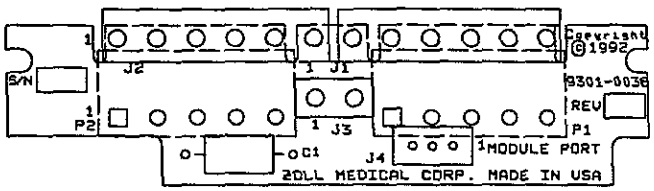


ZOLL
ASSEMBLY DRAWING, ANALOG BOARD, W/IMPEDANCE CIRCUIT
D 9301-0136-AD B
SCALE 1 = 1 SHEET 2/1

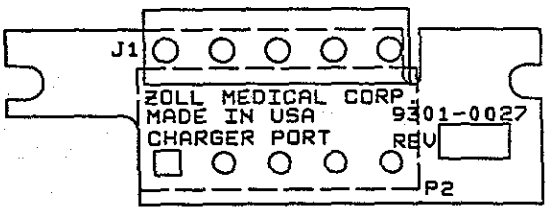

ASSEMBLY DWG.
PCB, PACE/DEFIB
D 9301-0103-AD



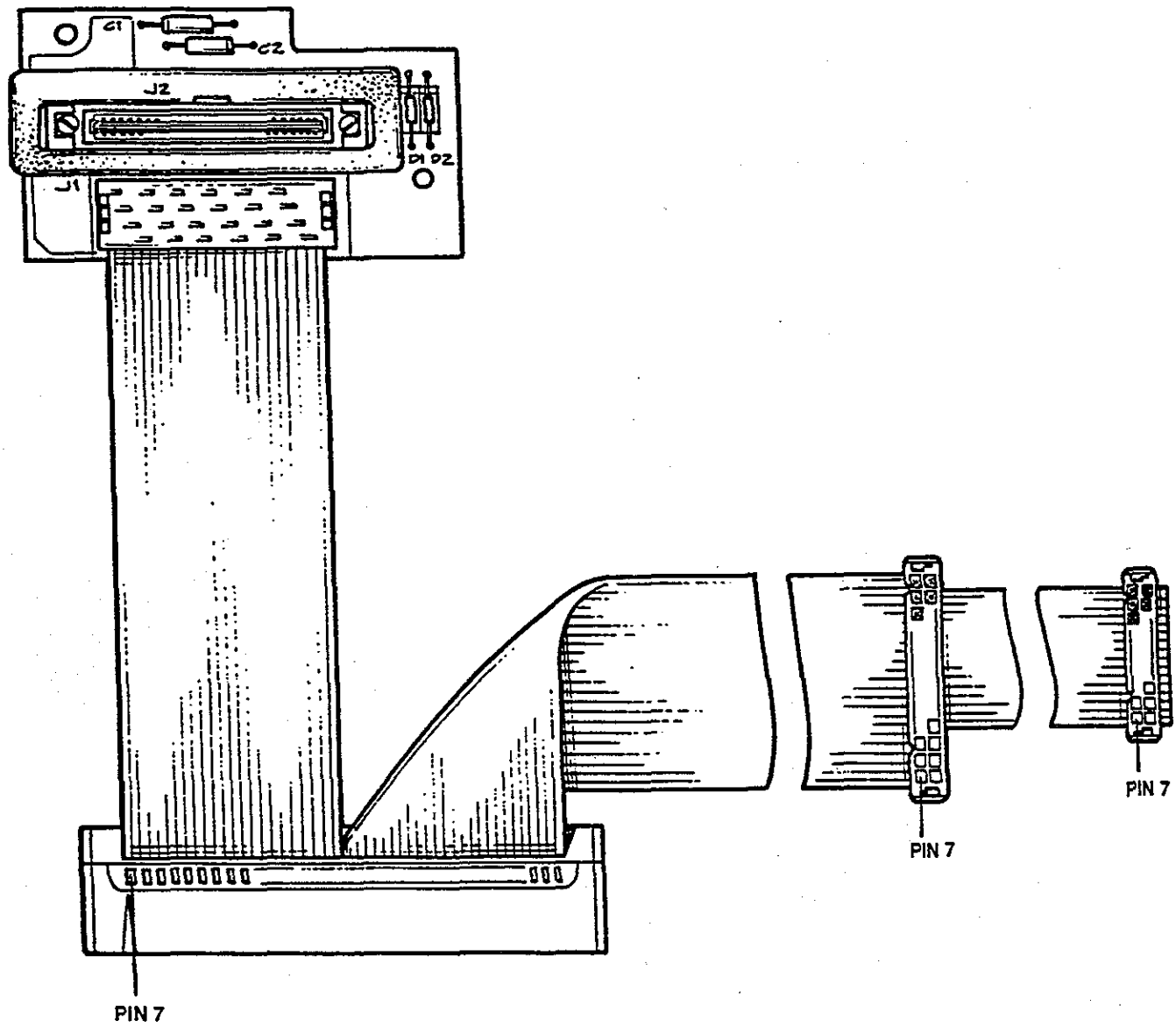
ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803		
TITLE: ASSEMBLY DWG, MODULE INTERFACE		
C	DWG NO. 9301-0106-AD	REV A
	SHT 1 OF 1	SCALE: 3/2



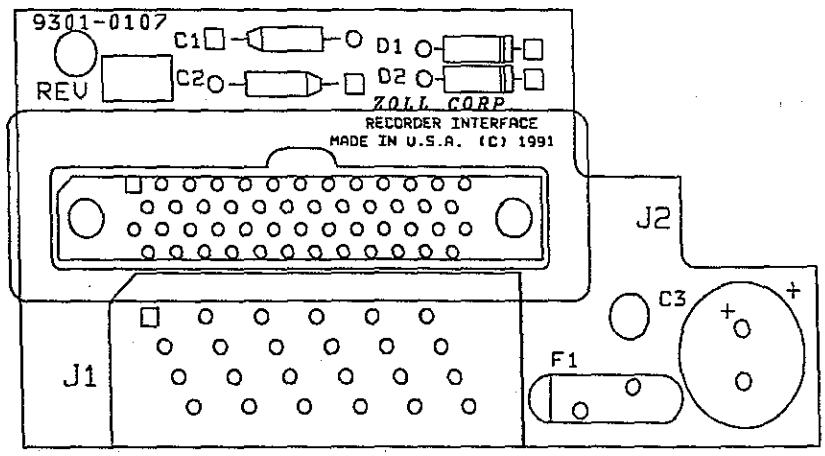
ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803		
TITLE ASSEMBLY DWG. PCB MODULE PORT FC-1400		
D	DWG NO. 9301-0036-AD	REV A
	SHT 1 OF 1	SCALE: 2/1



ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BIRLINGTON, MA. 01803		
TITLE ASSEMBLY DWG. PCB CHARGER PORT		
C	DWG NO. 9301-0027-AD	REV A
	SHT 1 OF 1	SCALE: 2/1



MAIN CABLE



ZOLL	ZOLL MEDICAL CORPORATION 32 SECOND AVENUE BURLINGTON, MA. 01803
TITLE	ASSEMBLY DWG. PCB, RECORDER INTERFACE
D	DWG NO 9301-0107-AD A
	SHT 1 OF 1 SCALE: FULL

SECTION VII

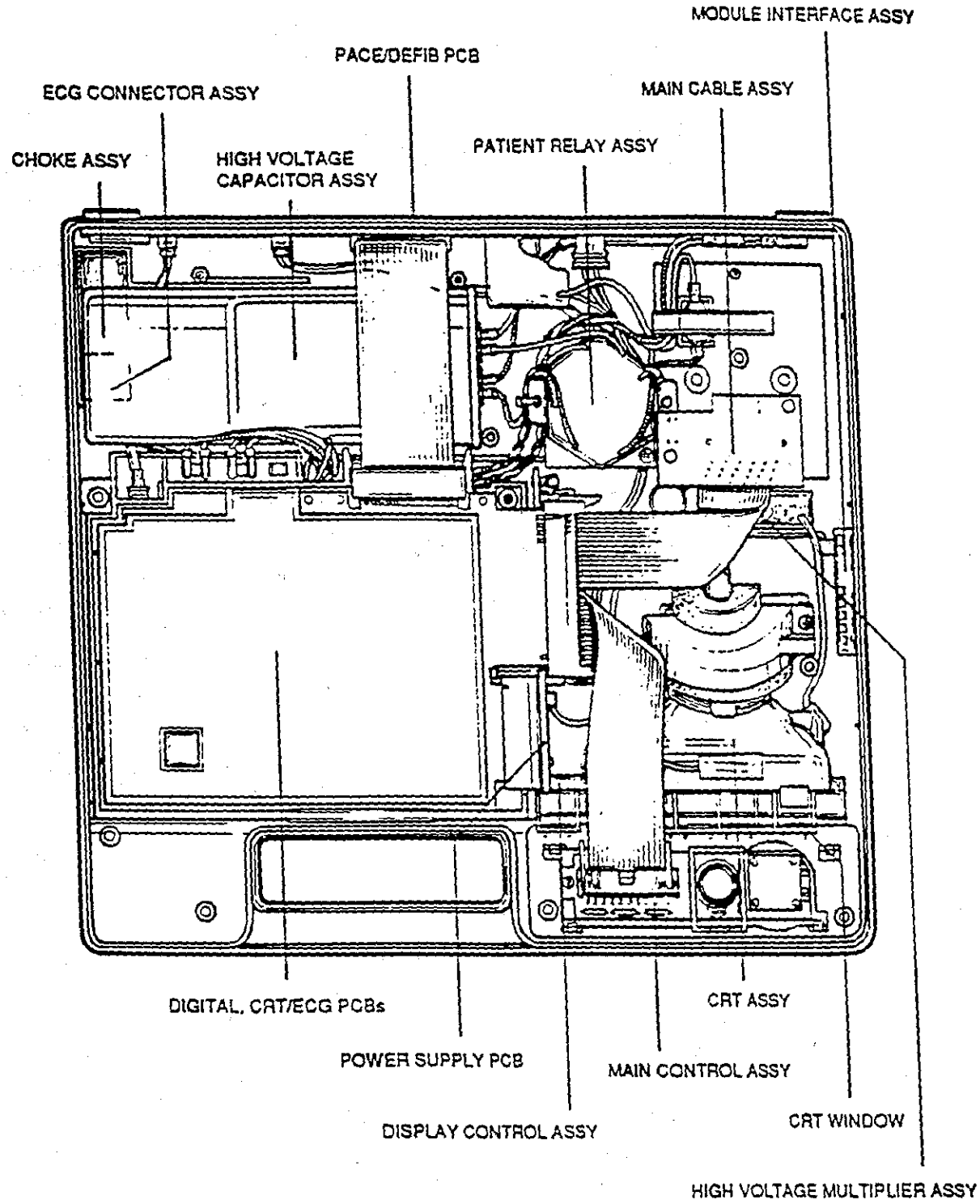
DISASSEMBLY PROCEDURES

This section is designed to assist in the removal and replacement of PD 1400-series components. Be sure to observe anti-static precautions whenever the unit is open.

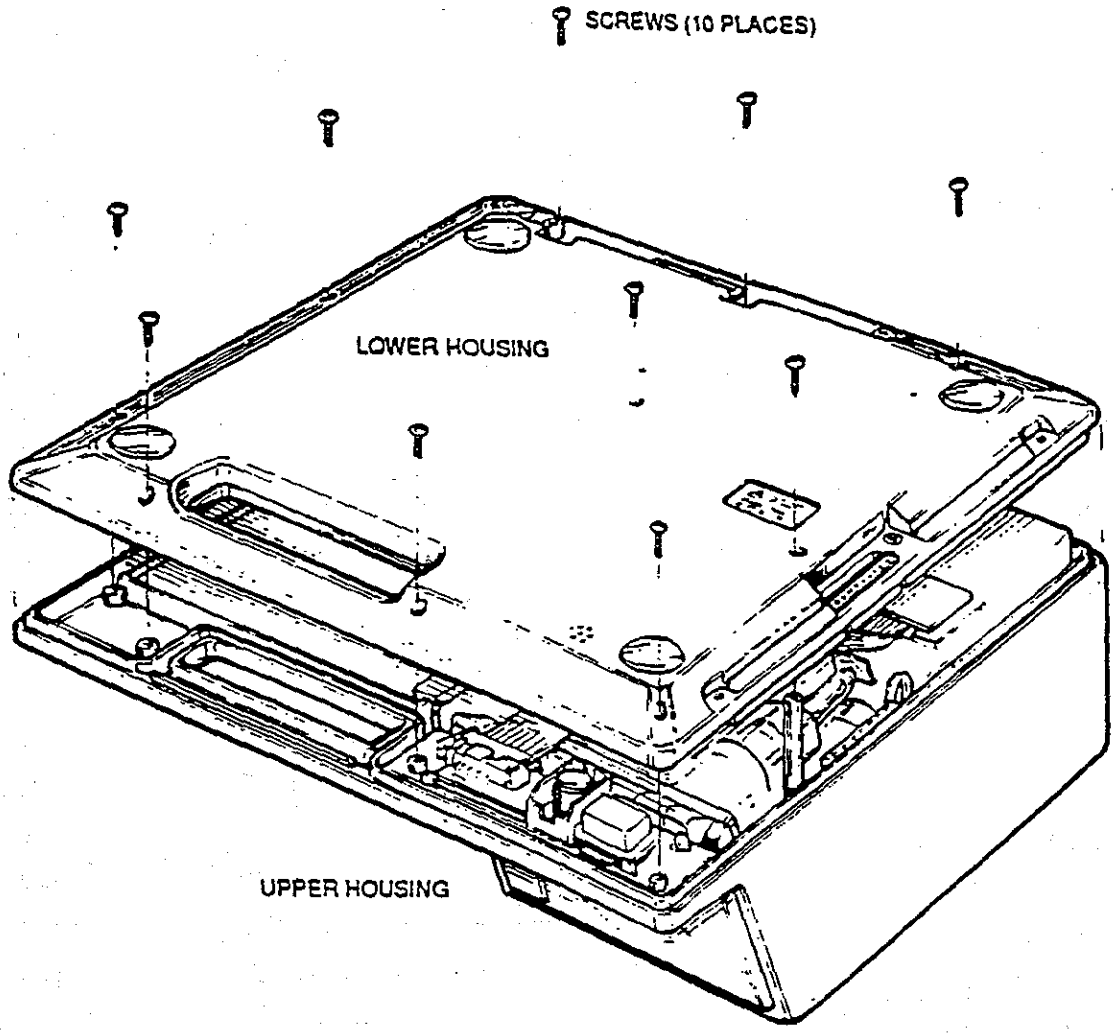
WARNING

- LETHAL VOLTAGES EXIST WITHIN THIS UNIT. PD 1400-SERIES UNITS SHOULD BE SERVICED BY QUALIFIED PERSONNEL ONLY!
- **Be sure to remove the battery from the unit before removing any components.**

Note: Cable paths and connector locations should be noted prior to disassembly. If cables are run in locations other than those indicated by the manufacturer, the unit may not close properly.


MODULE INTERFACE ASSY
PACE/DEFIB PCB
ECG CONNECTOR ASSY
MAIN CABLE ASSY
CHOKE ASSY
HIGH VOLTAGE CAPACITOR ASSY
PATIENT RELAY ASSY
DIGITAL, CRT/ECG PCBs
CRT ASSY
POWER SUPPLY PCB
MAIN CONTROL ASSY
DISPLAY CONTROL ASSY
CRT WINDOW
HIGH VOLTAGE MULTIPLIER ASSY

Description		Part Number	Page
1. Lower Housing Assembly		9310-0121-99	VII-5
2. Printer/Recorder		9350-0004	VII-7
3. Main Cable Assembly		9500-0202	VII-9
4. Main Control Assembly	D 1400	1004-0086	VII-11
	D 2000	1004-0087	VII-11
	PD 1400	1004-0013	VII-11
	PD 2000	1004-0085	VII-11
5. CRT/Yoke Assembly		1004-0016	VII-13
6. Pace Control Assembly	PD 1400, PD 2000	1004-0012	VII-15
	D 1400, D 2000	1004-0089	VII-15
7. CRT Window		1004-0026	VII-17
8. Display Control Assembly	D 1400, PD 1400	1004-0090	VII-19
	D 2000, PD 2000	1004-0088	VII-19
9. High Voltage Multiplier Assembly		9301-0104	VII-21
10. Module Interface PCB Assembly		9301-0106	VII-23
11. Power Supply PCB Assembly		9301-0102	VII-25
12. Digital PCB Assembly		9301-0138	VII-27
CRT/ECG PCB Assembly		9301-0136	VII-27
13. High Voltage Capacitor Assembly		9126-0002	VII-29
14. Pace/Defib PCB Assembly		9301-0100	VII-31
15. Patient Relay Assembly		1004-0019	VII-33
16. Battery Harness Assembly		9500-0203	VII-35
Battery Contact Pin		9330-0100	VII-35
17. ECG Connector Assembly		1004-0104	VII-37
18. Choke Assembly		9140-0050	VII-39
19. Pace/Defib Connector Assembly		1004-0011	VII-41
20. Paddle Guide		9310-0207	VII-43
21. Contact Plate		9320-0030	VII-45


SCREWS (10 PLACES)
LOWER HOUSING
UPPER HOUSING

1. REMOVING THE LOWER HOUSING

TOOLS REQUIRED:

- Standard phillips head screwdriver

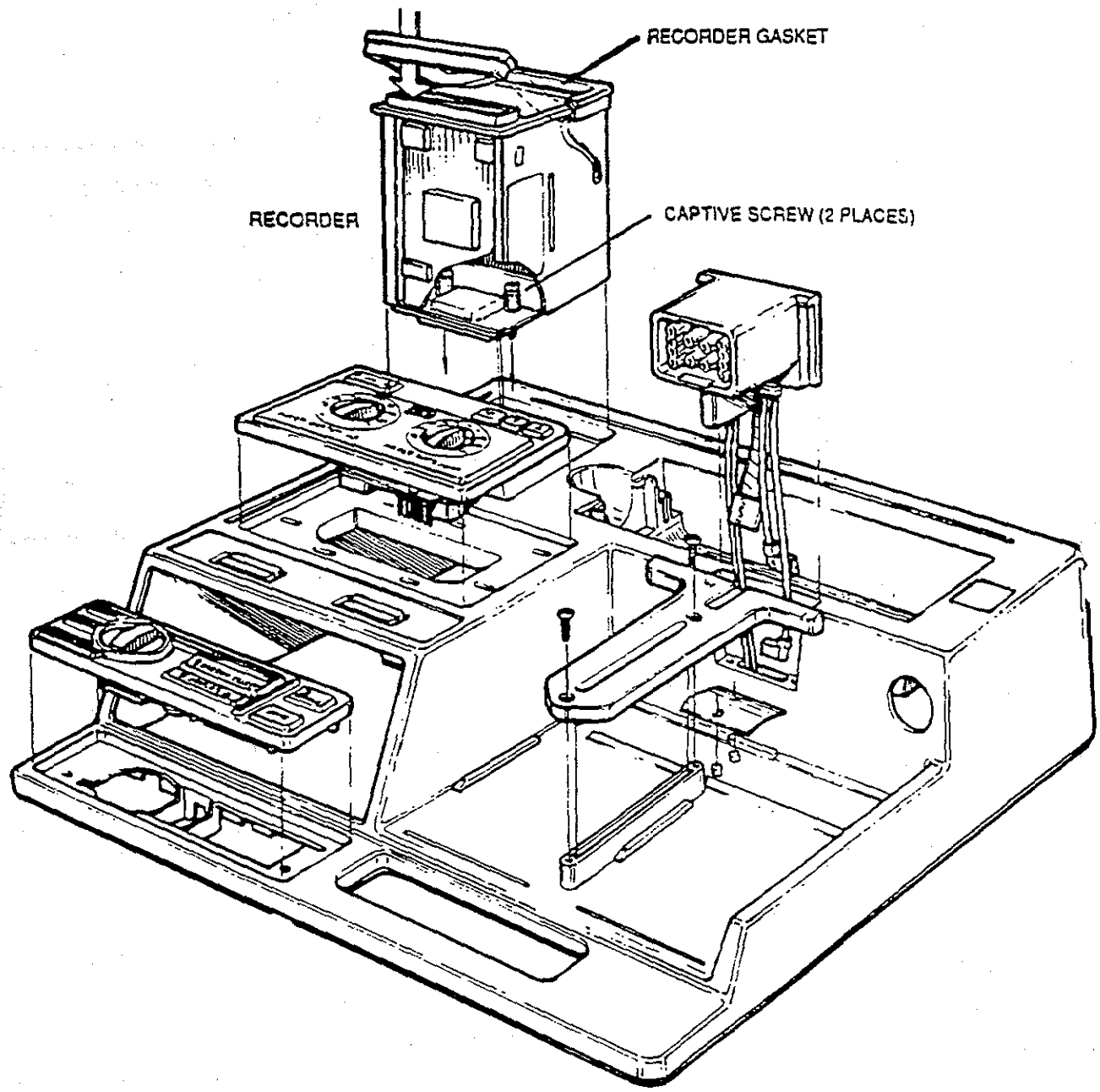
1. Remove 10 (ten) 6-32 x 5/26 screws as shown in the illustration.
2. Lift lower housing straight up and remove.

INSTALLING THE LOWER HOUSING

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Reverse steps 1 & 2 above.


RECORDER GASKET
RECORDER
CAPTIVE SCREW (2 PLACES)

2. REMOVING THE PRINTER/RECORDER

TOOLS REQUIRED:

- Standard phillips head screwdriver

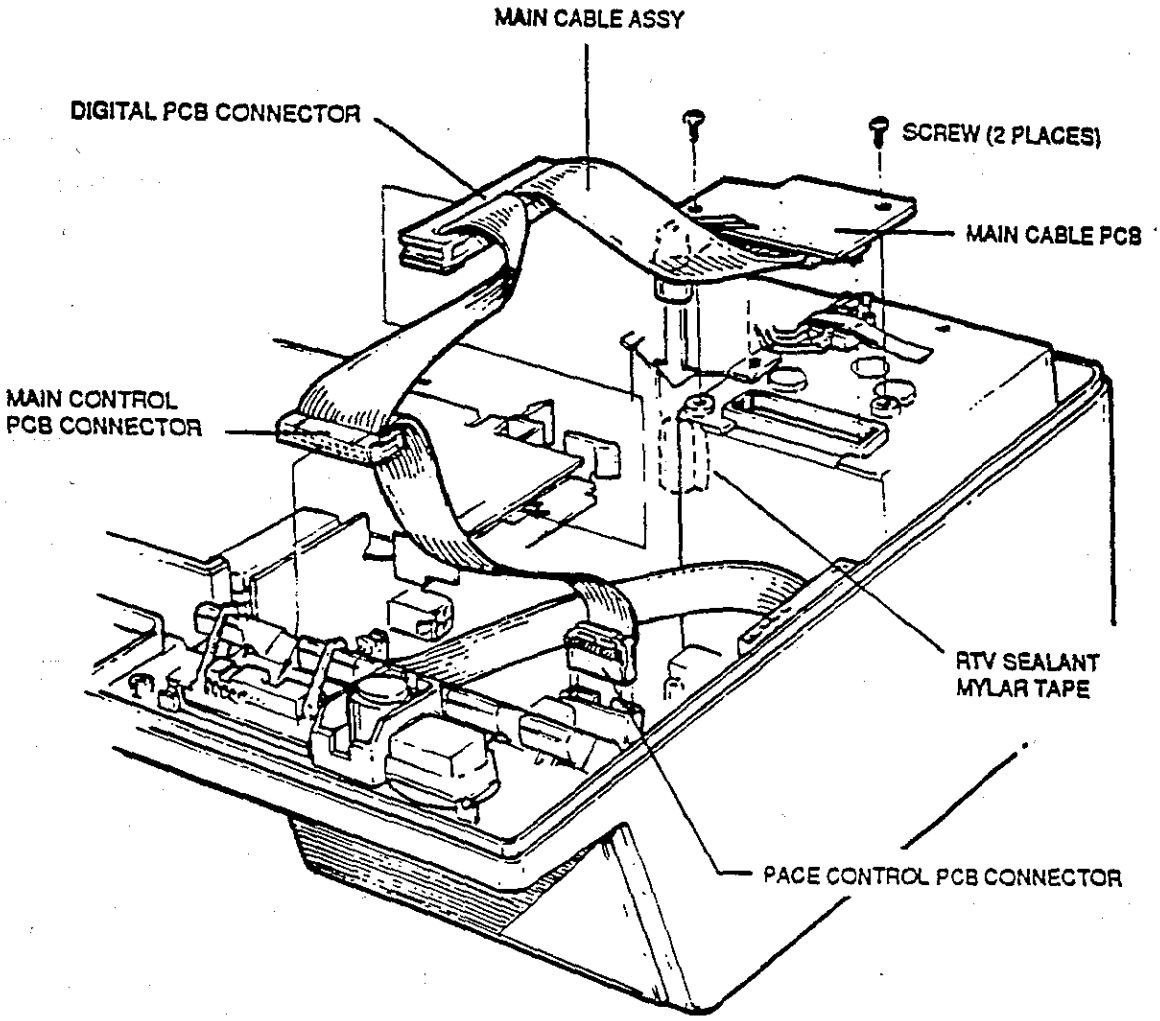
1. Loosen the 2 (two) captive mounting screws where indicated.
2. Lift printer/recorder straight out.
3. Remove and retain rubber gasket from printer/recorder.

INSTALLING THE PRINTER/RECORDER

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Replace rubber gasket.
2. Reverse steps 1 & 2 above.


MAIN CABLE ASSY
DIGITAL PCB CONNECTOR
SCREW (2 PLACES)
MAIN CABLE PCB
MAIN CONTROL
PCB CONNECTOR
RTV SEALANT
MYLAR TAPE
PACE CONTROL PCB CONNECTOR

3. REMOVING THE MAIN CABLE ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- X-Acto Knife

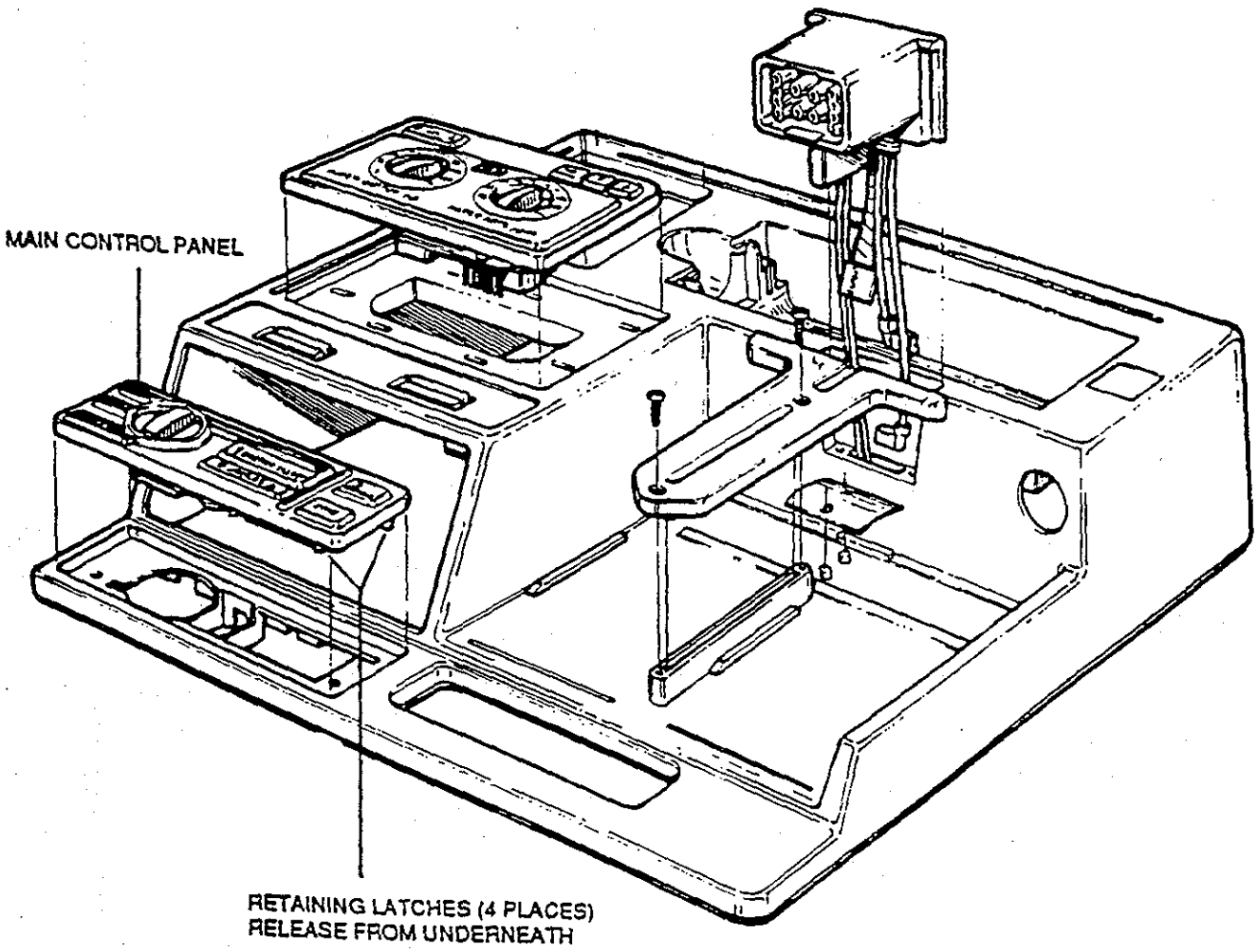
1. Remove lower housing as shown on page VII-5.
2. Release black levers from Main Control PCB
3. Disconnect main cable from main control PCB.
4. Disconnect main cable from digital PCB edge connector.
5. Disconnect main cable from pace control PCB connector.
6. Remove 2 (two) screws from main cable PCB where indicated.
7. Cut away mylar tape and RTV sealant that secures capacitor to recorder well.
8. Disconnect main cable PCB from printer/recorder connector.

INSTALLING THE MAIN CABLE ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- RTV sealant
- Mylar tape
- X-Acto Knife

1. Remove any remaining RTV from the recorder well with an X-Acto knife.
2. Apply RTV sealant to capacitor.
3. Check all gaskets for any rips or tears
4. Connect main cable PCB to printer/recorder connector.
5. Secure capacitor to recorder well by pressing RTV onto well and securing with mylar tape.
6. Secure main cable PCB to recorder well with 2 (two) screws where shown.
7. Reconnect remaining connectors by reversing steps 2 through 4 above.
8. Replace lower housing per instructions on page VII-5.


MAIN CONTROL PANEL
RETAINING LATCHES (4 PLACES)
RELEASE FROM UNDERNEATH

4. REMOVING THE MAIN CONTROL PANEL

TOOLS REQUIRED:

- Standard phillips head screwdriver
- X-Acto Knife

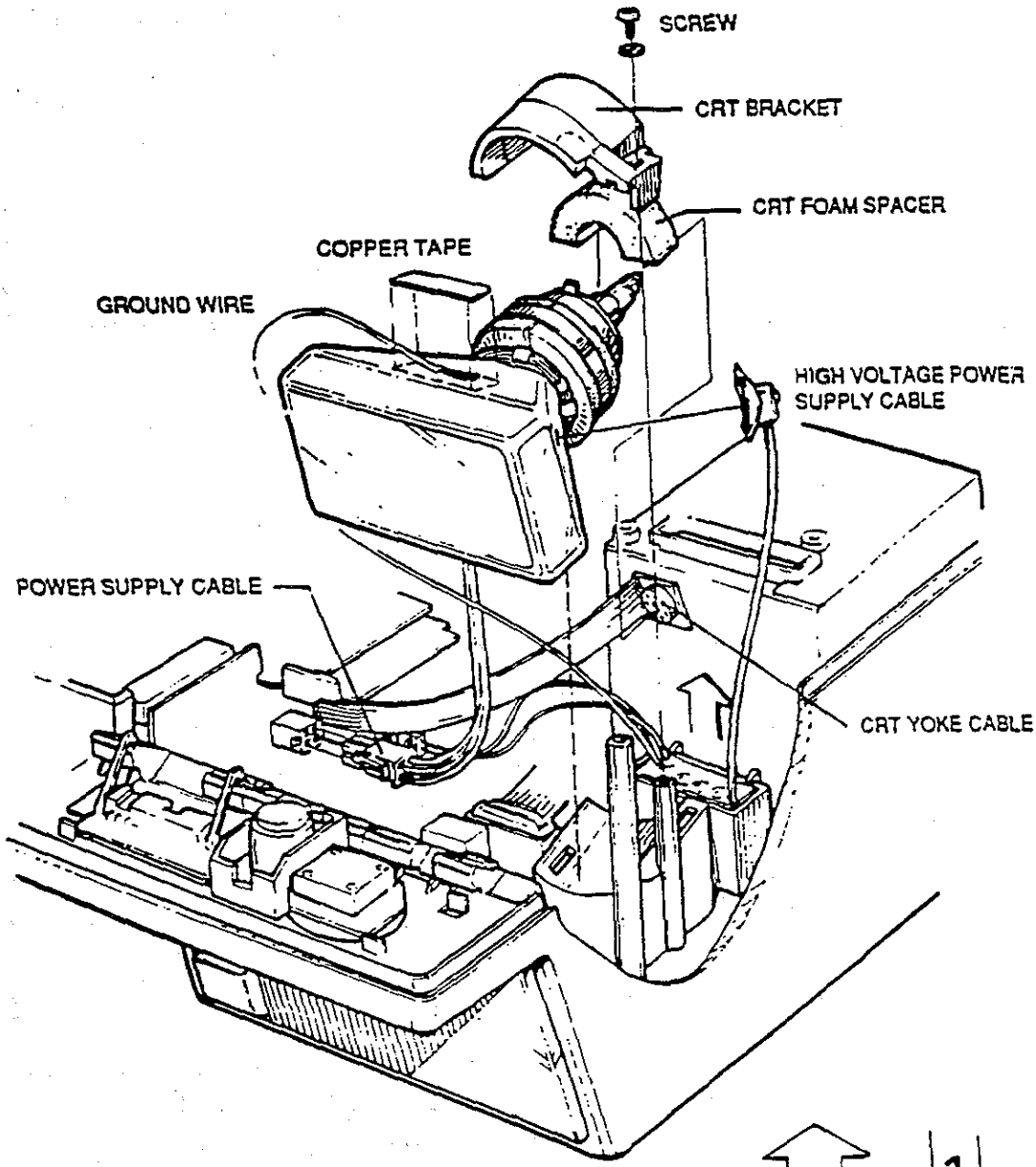
1. Remove the lower housing as shown on page VII-5.
2. Disconnect main cable from main control PCB as shown on page VII-9, step 2.
3. Cut the tie wrap and hot melt (4 places) and release main control assembly retaining latches from the upper housing. **Do not cut the latches.**
4. Push main control assembly out from inside the upper housing and remove.

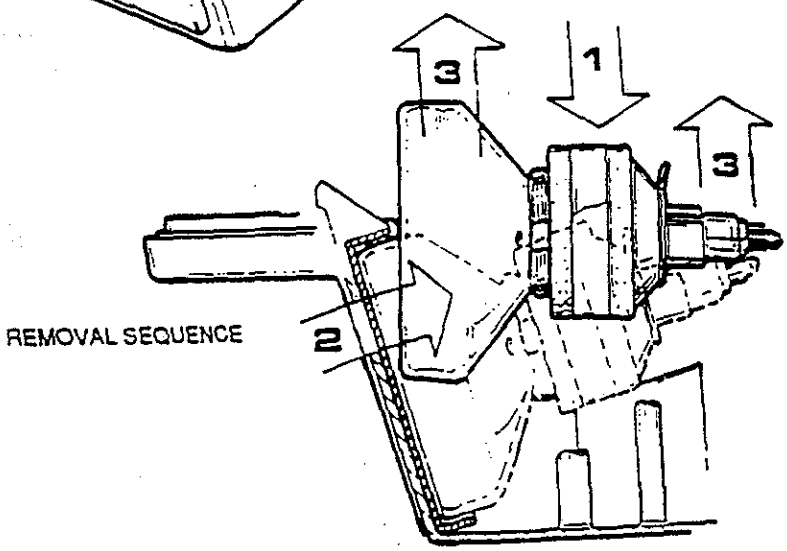
INSTALLING THE MAIN CONTROL PANEL

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Tie wrap
- RTV or hot melt

1. Insert main control assembly into upper housing until latches secure the assembly to the upper housing. Install new tie-wrap (4 places) around the latches. Apply RTV or hot melt.
2. Reconnect main cable assembly to main control assembly as shown on page VII-9.
3. Replace lower housing per instructions as shown on page VII-5.


SCREW
CRT BRACKET
CRT FOAM SPACER
COPPER TAPE
GROUND WIRE
HIGH VOLTAGE POWER SUPPLY CABLE
POWER SUPPLY CABLE
CRT YOKE CABLE


3
1
3
REMOVAL SEQUENCE
2

5. REMOVING THE CRT ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver

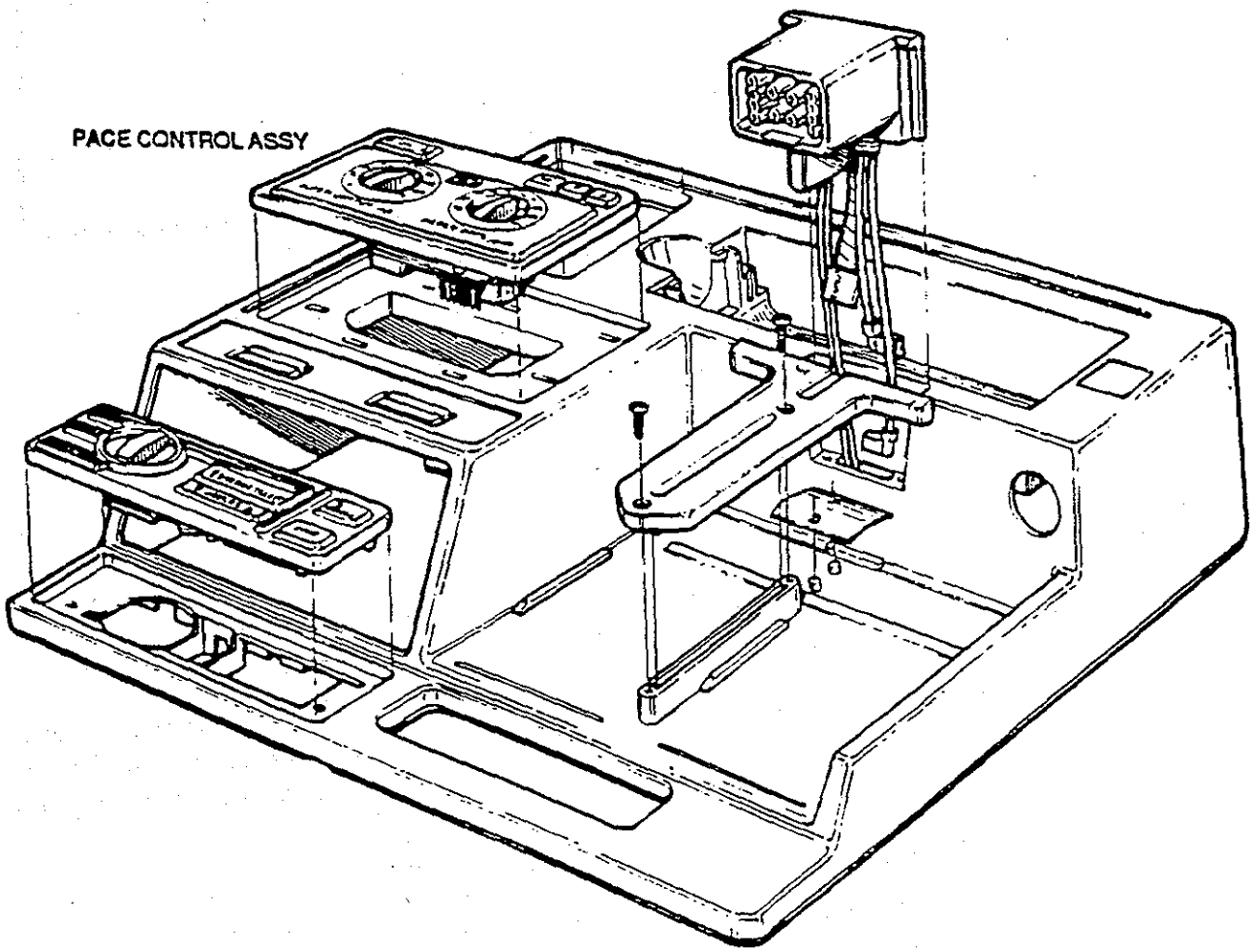
1. Remove the lower housing as shown on page VII-5.
2. Remove main cable assembly as shown on page VII-9.
3. Remove copper tape on CRT to release the ground wire.
4. Remove the screw securing the CRT bracket.
5. Remove the foam spacer from the CRT yoke.
6. Remove the CRT as shown in the illustration:
    1. Push down at the back of the CRT.
    2. Tilt the CRT back away from the CRT window.
    3. Partially lift the CRT out of the unit.
7. Disconnect the high-voltage power supply connector on the CRT. There are two metal clips inside the plastic shield securing the connector to the CRT monitor. Compress them together with a small flat blade screwdriver while pulling the connector away from the monitor.
8. Disconnect the CRT cable at the end of the CRT.
9. Disconnect the cable from the CRT at the power supply PCB.
10. Remove the CRT from the unit.

INSTALLING THE CRT ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver

1. Reverse steps 3-10.
2. Reconnect main cable assembly to main control assembly as shown on page VII-9.
3. Replace lower housing per instructions as shown on page VII-5.


PACE CONTROL ASSY

6. REMOVING THE PACE CONTROL ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers
- X-Acto Knife

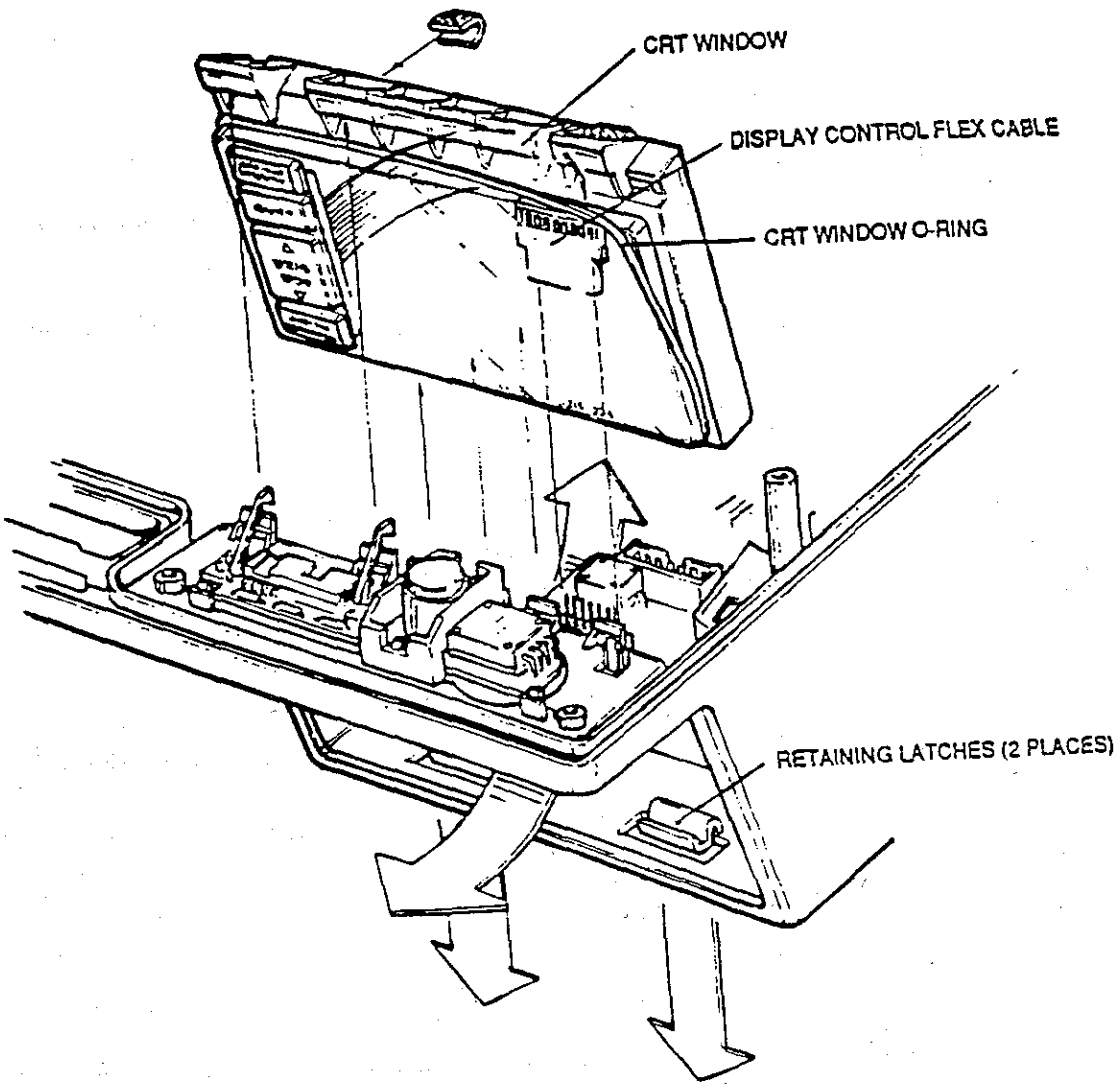
1. Remove the lower housing as shown on page VII-5.
2. Remove main cable connection at the main control and digital PCB as shown on page VII-9.
3. Remove CRT as shown on page VII-13.
4. Disconnect display control flex cable. (See page VII-16)
5. Release pace control assembly retaining latches (cut hot melt as necessary) and carefully push assembly through the top of the upper housing.

INSTALLING THE PACE CONTROL ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers
- Hot melt

1. Insert pace control assembly until latches secure assembly to upper housing. Apply hot melt.
2. Connect display control flex cable.
3. Install CRT as shown on page VII-13.
4. Connect main control cables as shown on page VII-9.
5. Replace lower housing as shown on page VII-5.


CRT WINDOW
DISPLAY CONTROL FLEX CABLE
CRT WINDOW O-RING
RETAINING LATCHES (2 PLACES)

7. REMOVING THE CRT WINDOW

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers

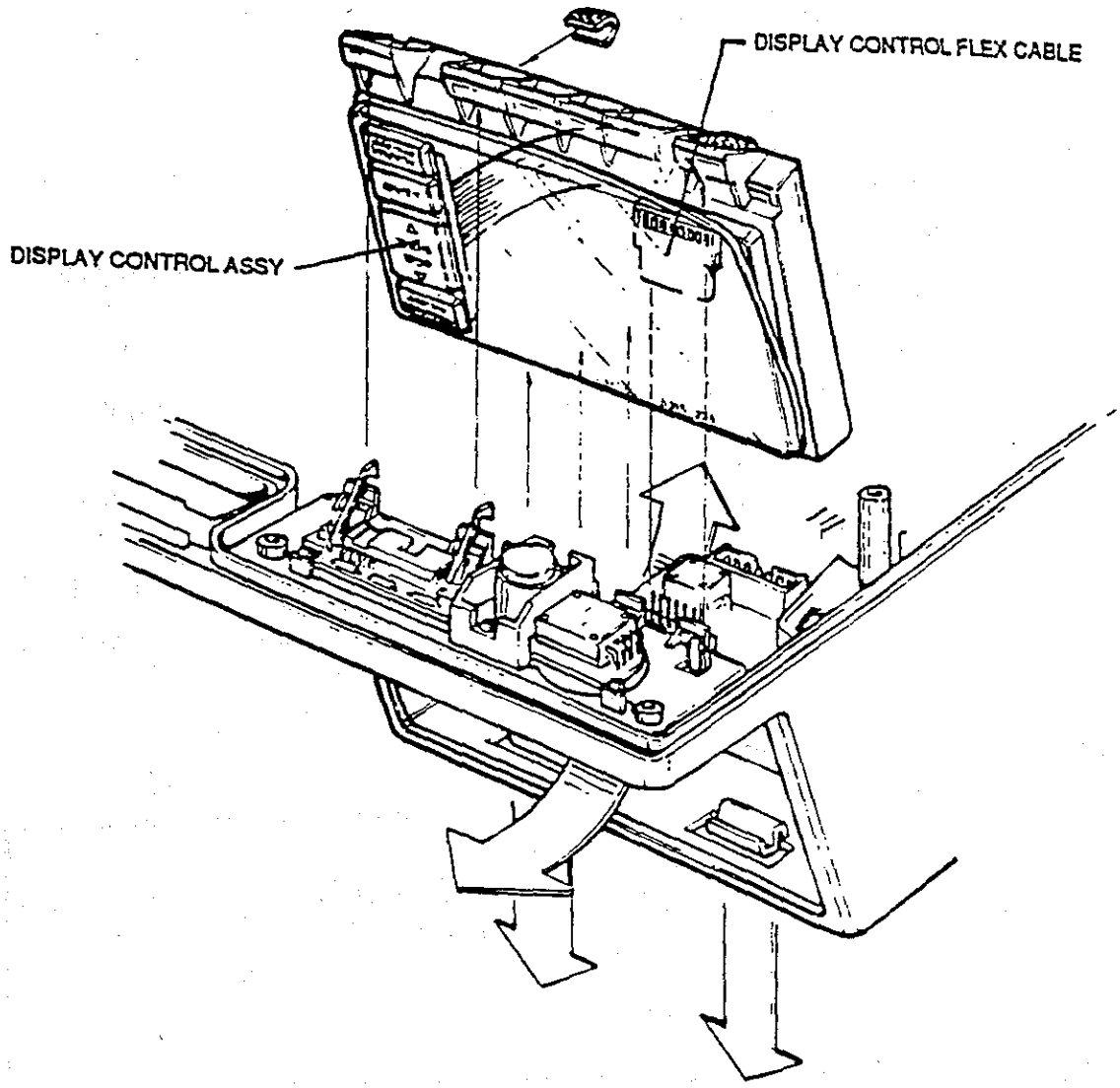
1. Remove the lower housing as shown on page VII-5.
2. Remove the main cable connection at the main control and digital PCB shown on page VII-9.
3. Remove the CRT as shown on page VII-13.
4. Disconnect the display control flex cable from the pace control assembly.
5. Release CRT window from the upper housing by depressing the retaining latches in the direction of arrows on the illustration.
6. Remove CRT window and display control assembly from the unit.
7. Remove the display control assembly from the CRT window per instructions on page VII-19.
8. Remove the CRT window O-ring from the CRT window.

INSTALLING THE CRT WINDOW

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers

1. Install the O-ring onto the CRT window.
2. Install the display control assembly onto the CRT window as shown on page VII-19.
3. Insert CRT window into the upper housing ensuring that the latches have completely seated and secured the CRT window in the unit.
4. Reconnect the display control assembly flex cables.
5. Install CRT as shown on page VII-13.
6. Connect main control cables as shown on page VII-9.
7. Replace lower housing as shown on page VII-5.


DISPLAY CONTROL FLEX CABLE
DISPLAY CONTROL ASSY

8. REMOVING THE DISPLAY CONTROL ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

Note: It is not necessary to remove the CRT window from the upper housing to perform this operation. CRT window is shown removed for clarity.

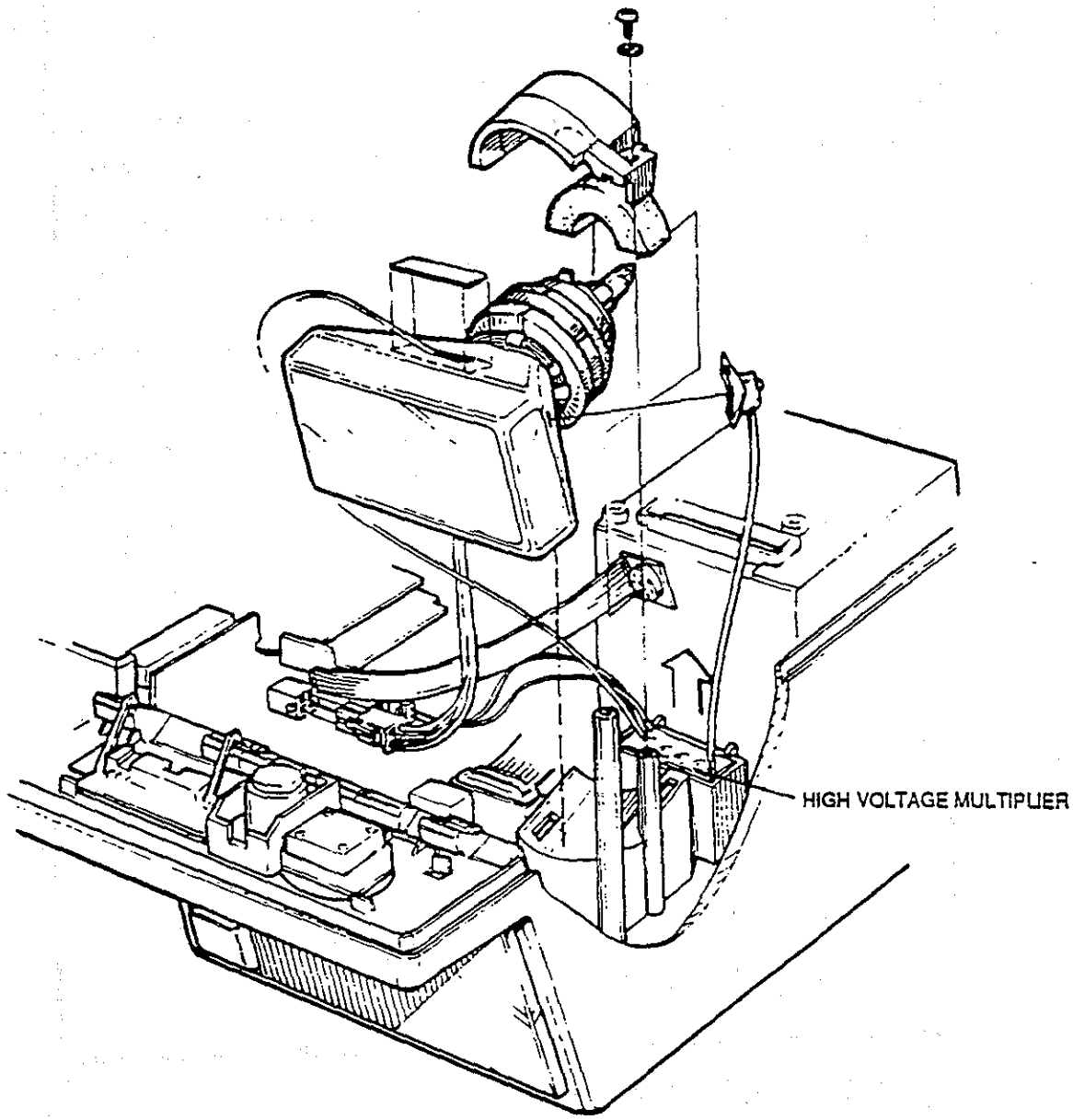
1. Remove lower housing as shown on page VII-5.
2. Disconnect main cable from main control assembly as shown on page VII-9.
3. Disconnect display control assembly flex cable from pace control assembly.
4. Release the 4 (four) display control assembly retainer latches from rear of CRT window.
5. Remove display control assembly through front of CRT window.

INSTALLING THE DISPLAY CONTROL ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

1. Reverse steps 3 through 5 above.
2. Connect main control cables as shown on page VII-9.
3. Replace lower housing as shown on page VII-5.


HIGH VOLTAGE MULTIPLIER

9. REMOVING THE HIGH VOLTAGE MULTIPLIER ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers

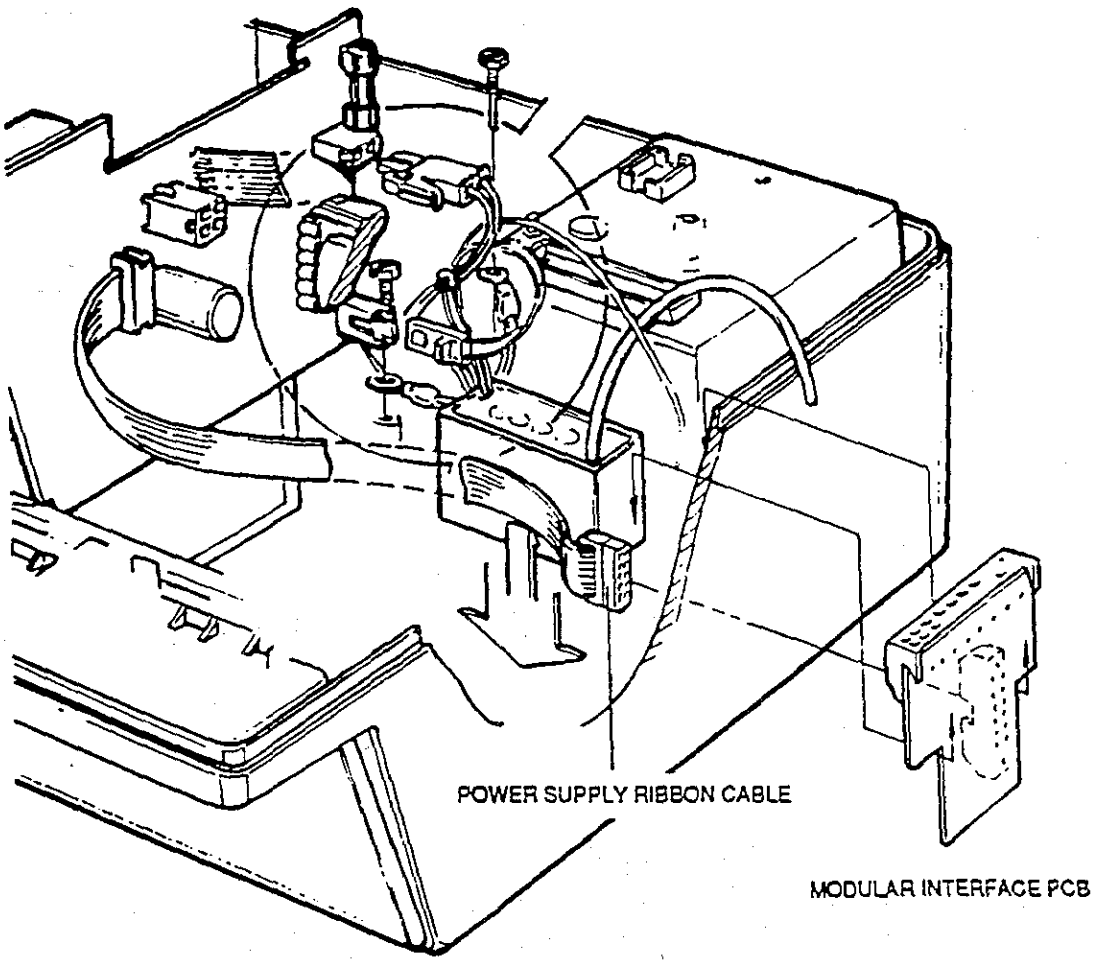
1. Remove the lower housing as shown on page VII-5.
2. Remove the main cable connection at the main control and digital PCB shown on page VII-9.
3. Remove the CRT as shown on page VII-13.
4. Disconnect the high-voltage cable at the power supply PCB.
5. Release the clip holding the HV multiplier and remove from the unit.

INSTALLING THE HIGH VOLTAGE MULTIPLIER ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Small flat blade screwdriver
- Needle nose pliers

1. Reverse steps 4 & 5 above.
2. Install CRT as shown on page VII-13.
3. Connect main control cables as shown on page VII-9.
4. Replace lower housing as shown on page VII-5.


POWER SUPPLY RIBBON CABLE
MODULAR INTERFACE PCB

10. REMOVING THE MODULE INTERFACE PCB ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver

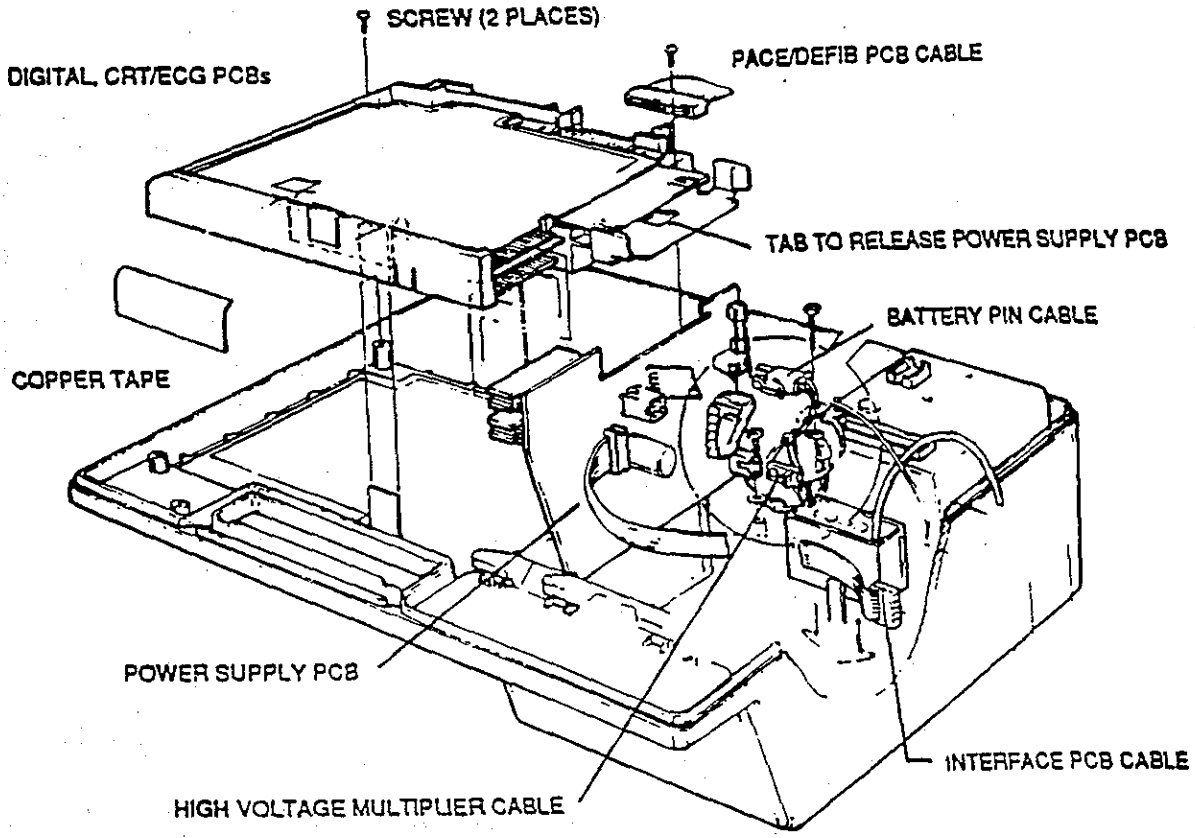
1. Remove the lower housing as shown on page VII-5.
2. Lift module interface PCB assembly partially from unit.
3. Disconnect ribbon cable from power supply PCB.
4. Remove module interface PCB assembly.

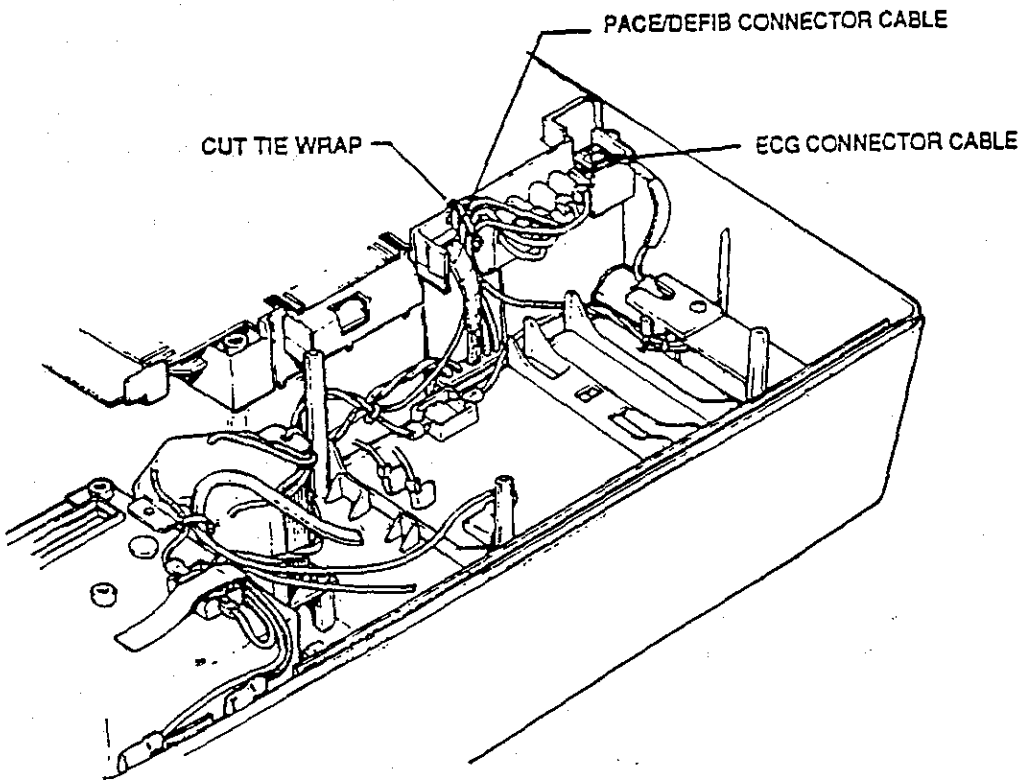
INSTALLING THE MODULE INTERFACE PCB ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Connect ribbon cable from power supply PCB.
2. Insert module interface PCB assembly as shown.
3. Install lower housing as shown on page VII-5.


SCREW (2 PLACES)
PACE/DEFIB PCB CABLE
DIGITAL, CRT/ECG PCBs
TAB TO RELEASE POWER SUPPLY PCB
BATTERY PIN CABLE
COPPER TAPE
POWER SUPPLY PCB
INTERFACE PCB CABLE
HIGH VOLTAGE MULTIPLIER CABLE


PACE/DEFIB CONNECTOR CABLE
CUT TIE WRAP
ECG CONNECTOR CABLE

11. REMOVING THE POWER SUPPLY PCB ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers
- X-Acto Knife

Note: It is not necessary to remove the CRT window from the upper housing to perform this operation. CRT window is shown removed for clarity.

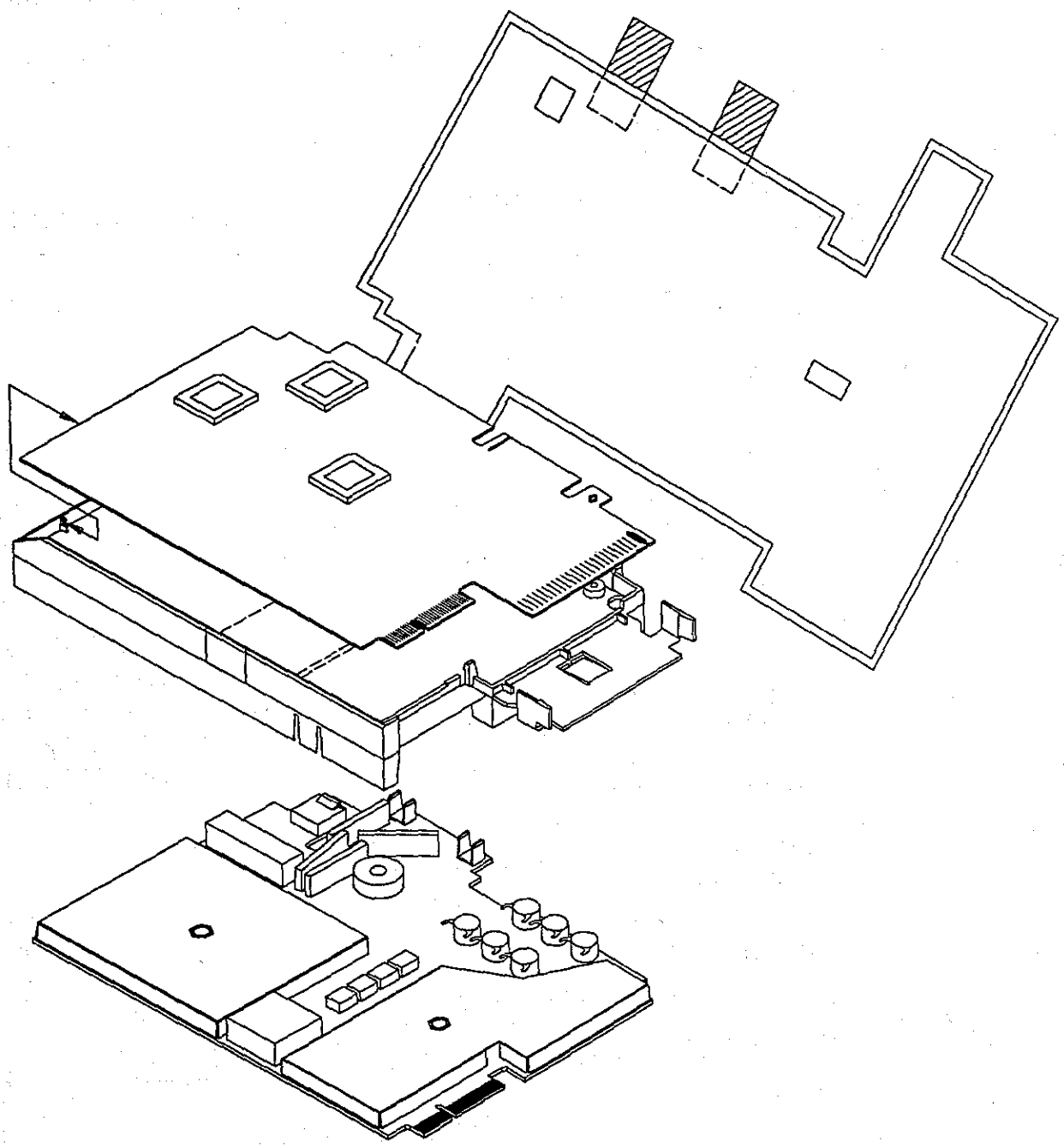
1. Remove the lower housing as shown on page VII-5.
2. Disconnect the main cable connection at the main control and digital PCB as shown on page VII-9.
3. Disconnect the CRT yoke connector at CRT.
4. Disconnect the CRT/power supply cable connector at the power supply.
5. Disconnect the battery terminal/power supply connector at the power supply.
6. Disconnect 4 (four) leads from patient relay on rear of CRT/ECG board.
7. Disconnect pace/defib connector/digital board connector at rear of the digital board. The connector lock is located under the connector.
8. Disconnect the digital PCB/defib PCB connector at rear of the digital PCB.
9. Disconnect the ECG connector cable at the rear of the CRT/ECG PCB.
10. Remove the copper tape on the front of the chassis.
11. Cut tie wrap securing the wires at the rear of the chassis.
12. Lift PCB chassis partially out of the unit.
13. Disconnect HV multiplier/power supply PCB connector at power supply.
14. Disconnect the power supply/interface PCB connector at the interface PCB.
15. Lift the chassis out of the unit.
16. Unclip tab and remove the power supply PCB from the chassis.

INSTALLING THE DIGITAL POWER SUPPLY PCB ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers
- Tie wrap

1. Reverse steps 3-17.
2. Connect main control cables as shown on page VII-9.
3. Replace lower housing as shown on page VII-5.



12. DISASSEMBLY OF THE DIGITAL, CRT/ECG PCB CHASSIS

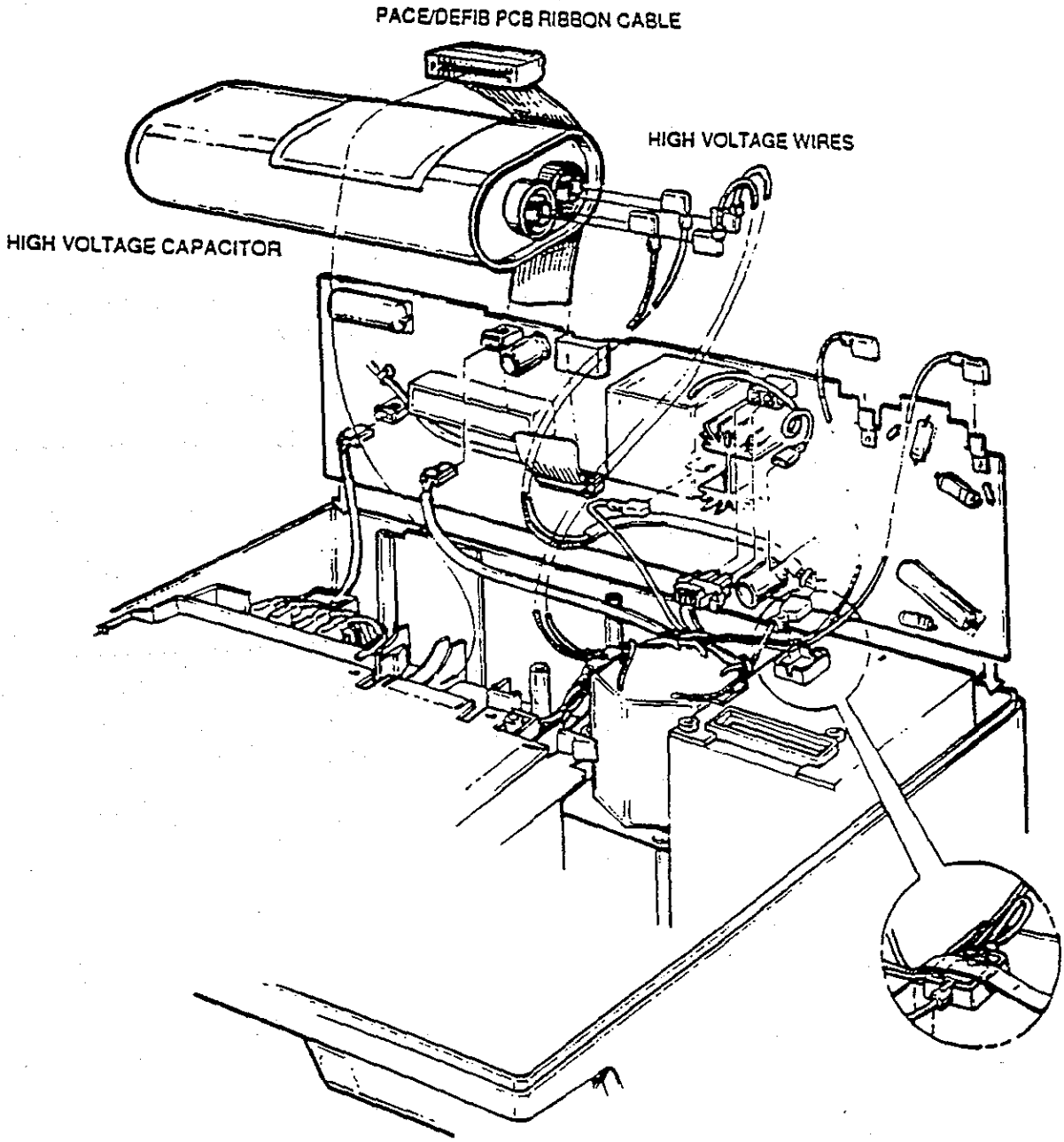
TOOLS REQUIRED:
- Standard phillips head screwdriver
- Needle nose pliers

1. Remove the PCB chassis as shown on page VII-25.
2. To remove digital and CRT/ECG PCBs from the main board chassis release chassis clip on right side and remove.

ASSEMBLY OF THE DIGITAL, CRT/ECG PCB CHASSIS

TOOLS REQUIRED:
- Standard phillips head screwdriver
- Needle nose pliers

1. Assemble as shown in the illustration.
2. Replace the PCB chassis as shown on page VII-25.


PACE/DEFIB PCB RIBBON CABLE
HIGH VOLTAGE WIRES
HIGH VOLTAGE CAPACITOR

13. REMOVING THE HIGH VOLTAGE CAPACITOR

WARNING

- COMPLETELY DISCHARGE HIGH VOLTAGE CAPACITOR BEFORE REMOVING FROM UNIT.
- DO NOT SHORT THE TERMINAL ENDS OF THE CAPACITOR.

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers
- Voltmeter & Resistors

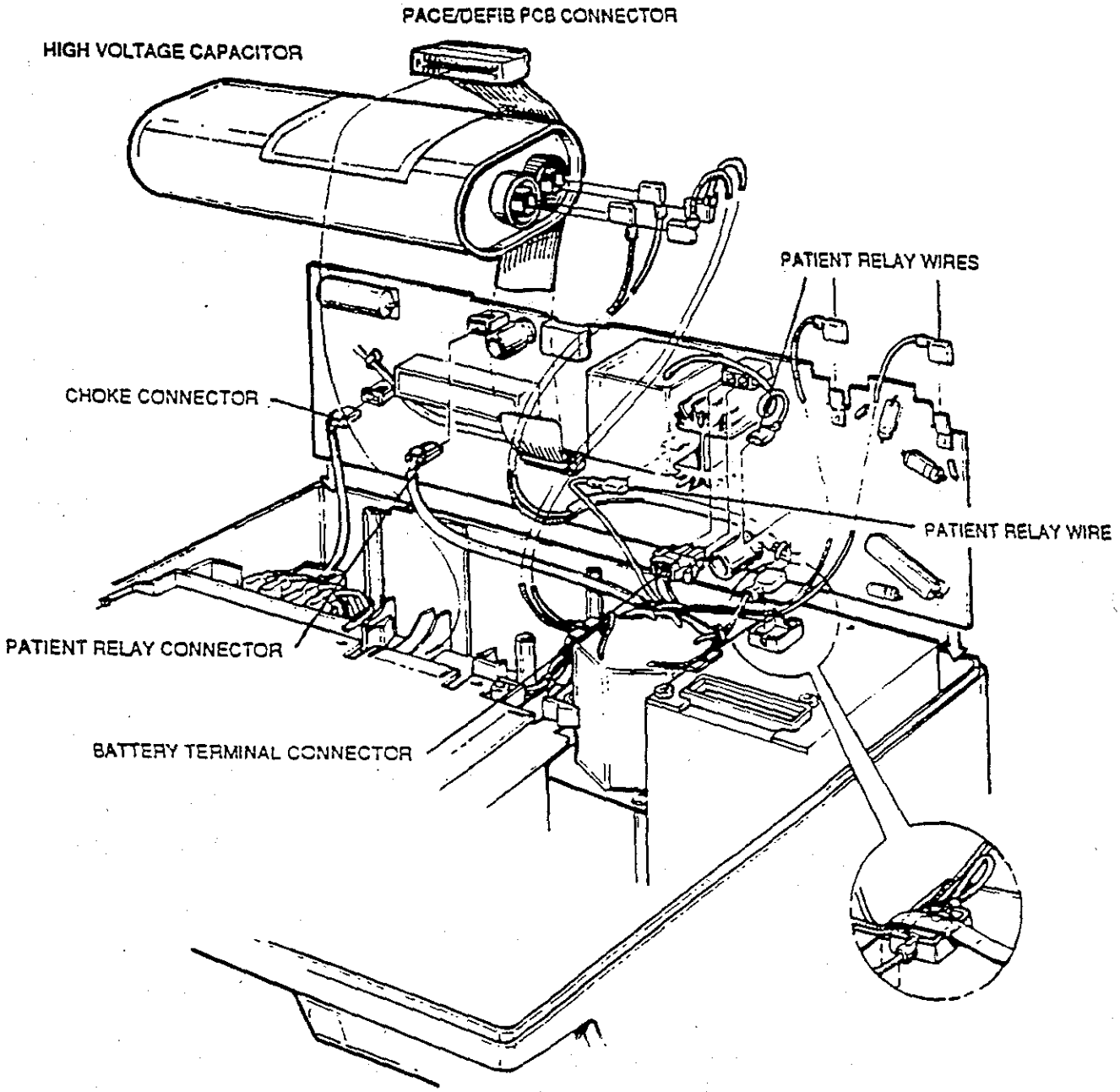
1. Remove the lower housing as shown on page VII-5.
2. Disconnect pace/defib PCB ribbon cable from the digital PCB.
3. Measure the voltage of the capacitor with a voltmeter.
4. Use appropriate 5 watt resistor to bleed the excess voltage slowly and safely based on the voltmeter reading.
5. Partially remove the high voltage capacitor from the unit.
6. Disconnect the 4 high voltage wires from the high voltage capacitor.
7. Remove the capacitor from the unit.

INSTALLING THE HIGH VOLTAGE CAPACITOR

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

1. Connect the high voltage wires to the high voltage capacitor.
2. Place the high voltage capacitor, label side up, into the unit. Be sure not to pinch any wires under the capacitor.
3. Connect the pace/defib PCB ribbon cable to the digital PCB.
4. Install the lower housing as shown on page VII-5.


PACE/DEFIB PCB CONNECTOR
HIGH VOLTAGE CAPACITOR
PATIENT RELAY WIRES
CHOKE CONNECTOR
PATIENT RELAY WIRE
PATIENT RELAY CONNECTOR
BATTERY TERMINAL CONNECTOR

14. REMOVING THE DEFIB PCB

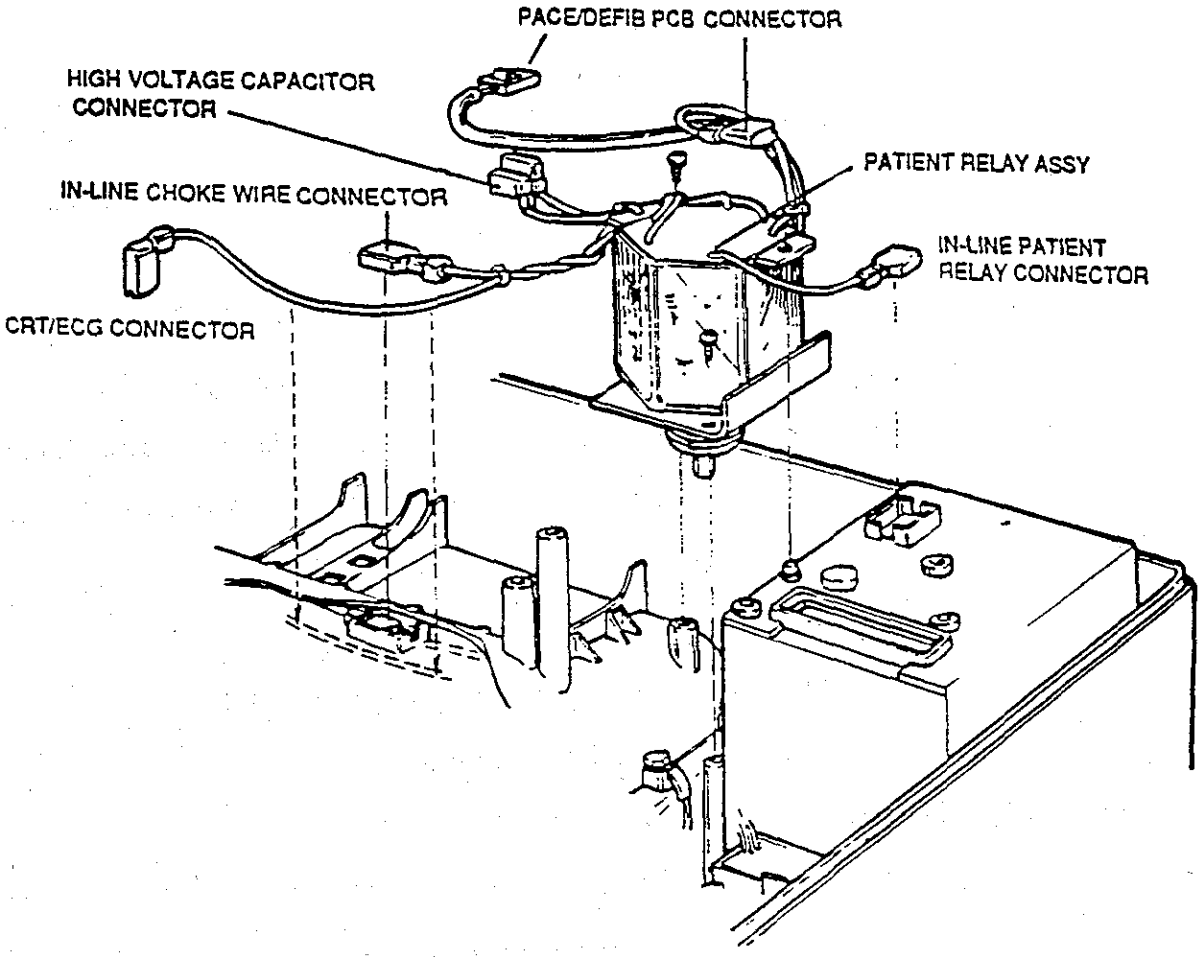
TOOLS REQUIRED:
- Standard phillips head screwdriver
- Needle nose pliers

1. Remove the lower housing as shown on page VII-5.
2. Remove the high-voltage capacitor as shown on page VII-29.
3. Disconnect pace/defib PCB ribbon cable from the digital PCB.
4. Disconnect the 4 (four) leads from the patient relay at the defib PCB.
5. Disconnect the battery terminal harness connector from the defib PCB.
6. Disconnect the choke connector at the defib PCB.
7. Partially lift the defib PCB out of the unit.
8. Disconnect the remaining lead from the patient relay.
9. Remove the defib PCB from the unit.

INSTALLING THE DEFIB PCB

TOOLS REQUIRED:
- Standard phillips head screwdriver
- Needle nose pliers

1. Reverse steps 3 through 9 above.
2. Install the high-voltage capacitor as shown on page VII-29.
3. Install the lower housing as shown on page VII-5.


PACE/DEFIB PCB CONNECTOR
HIGH VOLTAGE CAPACITOR CONNECTOR
PATIENT RELAY ASSY
IN-LINE CHOKE WIRE CONNECTOR
IN-LINE PATIENT RELAY CONNECTOR
CRT/ECG CONNECTOR

15. REMOVING THE PATIENT RELAY ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

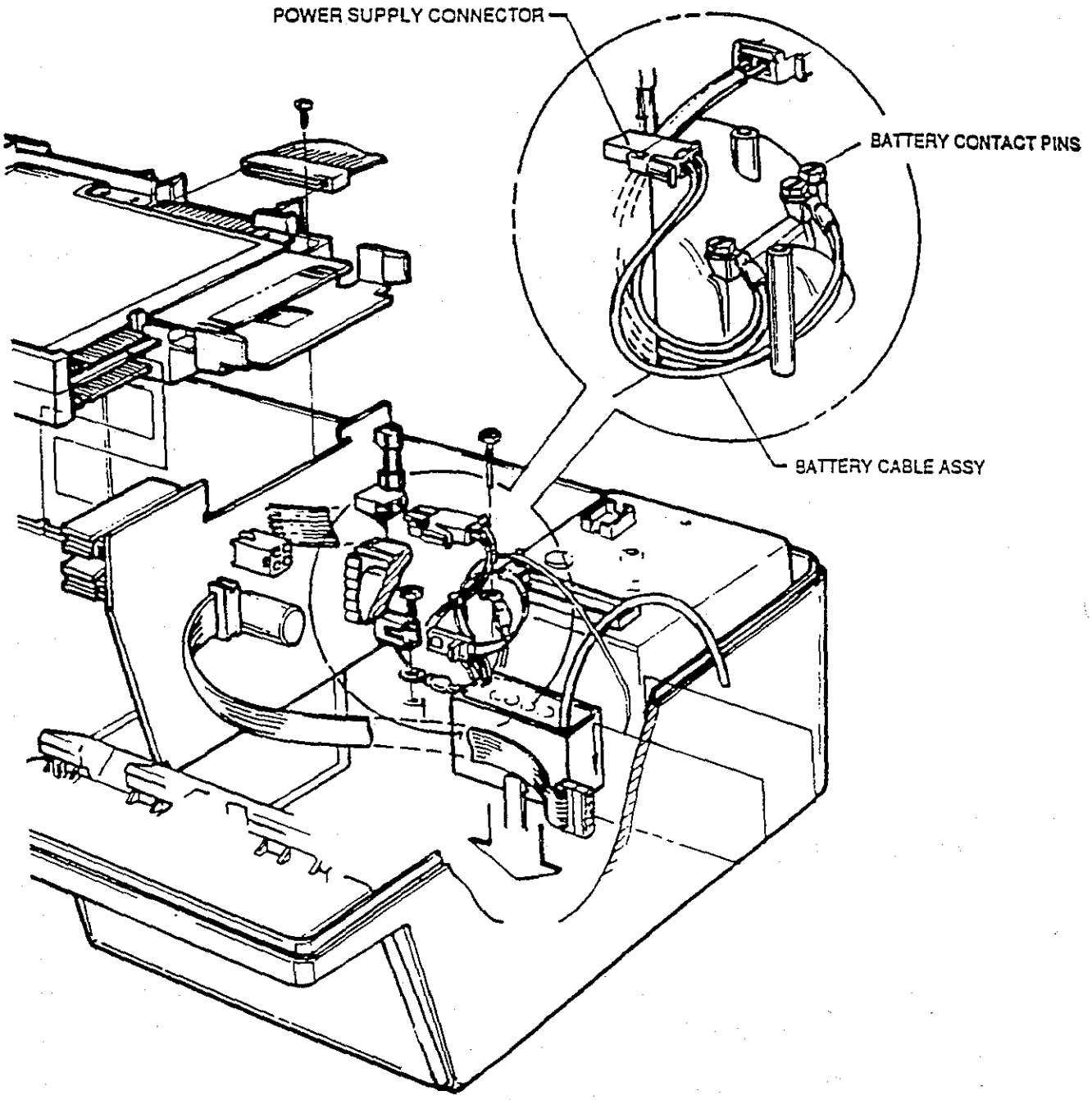
1. Remove the lower housing as shown on page VII-5.
2. Remove main cable assembly as shown on page VII-9.
3. Remove the high-voltage capacitor as shown on page VII-29.
4. Partially remove the defib PCB from the unit as shown on page VII-31.
5. Disconnect the 2 (two) wires to pace/defib PCB.
6. Disconnect the in-line patient relay connector.
7. Disconnect the CRT/ECG connector at the rear of the CRT/ECG PCB.
8. Disconnect the choke wire at the in-line connector.
9. Remove the 2 (two) screws securing the patient relay bracket to the unit.
10. Lift patient relay out of unit.

INSTALLING THE PATIENT RELAY ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

1. Reverse steps 4 through 10 above.
2. Install the high-voltage capacitor as shown on page VII-29.
3. Install the main cable assembly as shown on page VII-9.
4. Install the lower housing as shown on page VII-5.


POWER SUPPLY CONNECTOR
BATTERY CONTACT PINS
BATTERY CABLE ASSY

16. REMOVING THE BATTERY TERMINAL HARNESS, PIN ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers
- Regular screwdriver

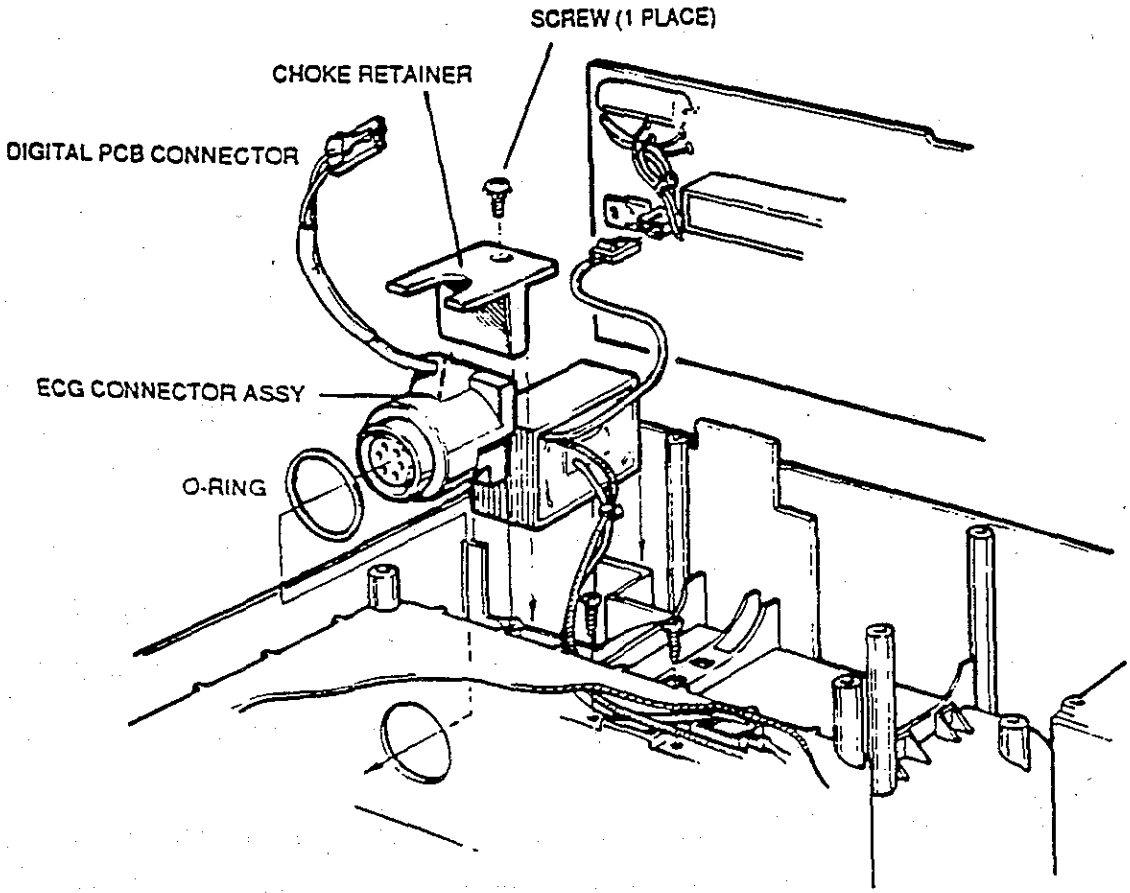
1. Remove the lower housing as shown on page VII-5.
2. Remove main cable assembly as shown on page VII-9.
3. Remove the high-voltage capacitor as shown on page VII-29.
4. Remove the patient relay as shown on page VII-33.
5. Disconnect the power supply connector at the power supply PCB.
6. Disconnect the pace/defib PCB connector at the pace/defib PCB.
7. Remove the 2 (two) battery contact pins securing the battery harness to the unit.

INSTALLING THE BATTERY TERMINAL HARNESS, PIN ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers
- Regular screwdriver

1. Reverse steps 5 through 7 above. Install the red wire to the rear battery contact pin and the black wire to the front battery contact pin.
2. Install the patient relay as shown on page VII-33
3. Install the high-voltage capacitor as shown on page VII-29.
4. Install the main cable assembly as shown on page VII-9.
5. Install the lower housing as shown on page VII-5.


SCREW (1 PLACE)
CHOKE RETAINER
DIGITAL PCB CONNECTOR
ECG CONNECTOR ASSY
O-RING

17. REMOVING THE ECG CONNECTOR ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Needle nose pliers

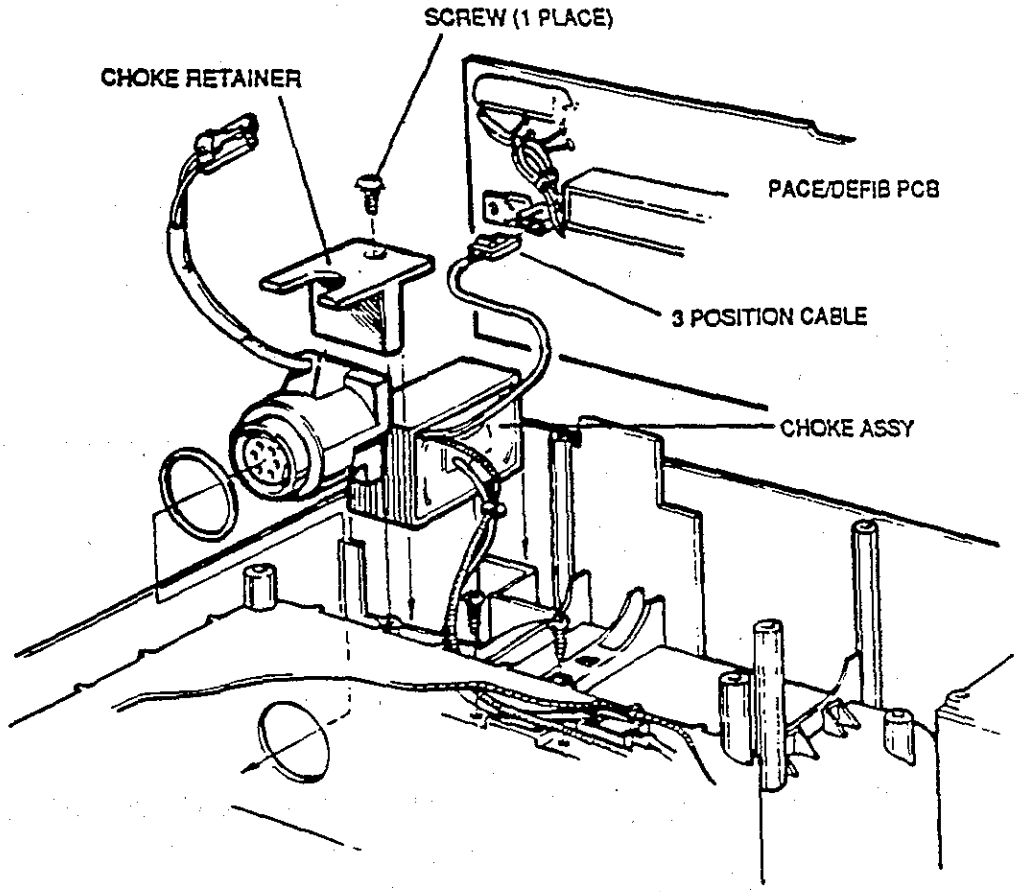
1. Remove the lower housing as shown on page VII-5.
2. Remove the high-voltage capacitor as shown on page VII-29.
3. Disconnect the 4 pin connector from the digital PCB assembly.
4. Remove the screw securing the choke retainer.
5. Remove choke retainer.
6. Pull the ECG connector assembly toward the back of the unit and up to remove.
7. Remove and retain the ECG connector O-ring.

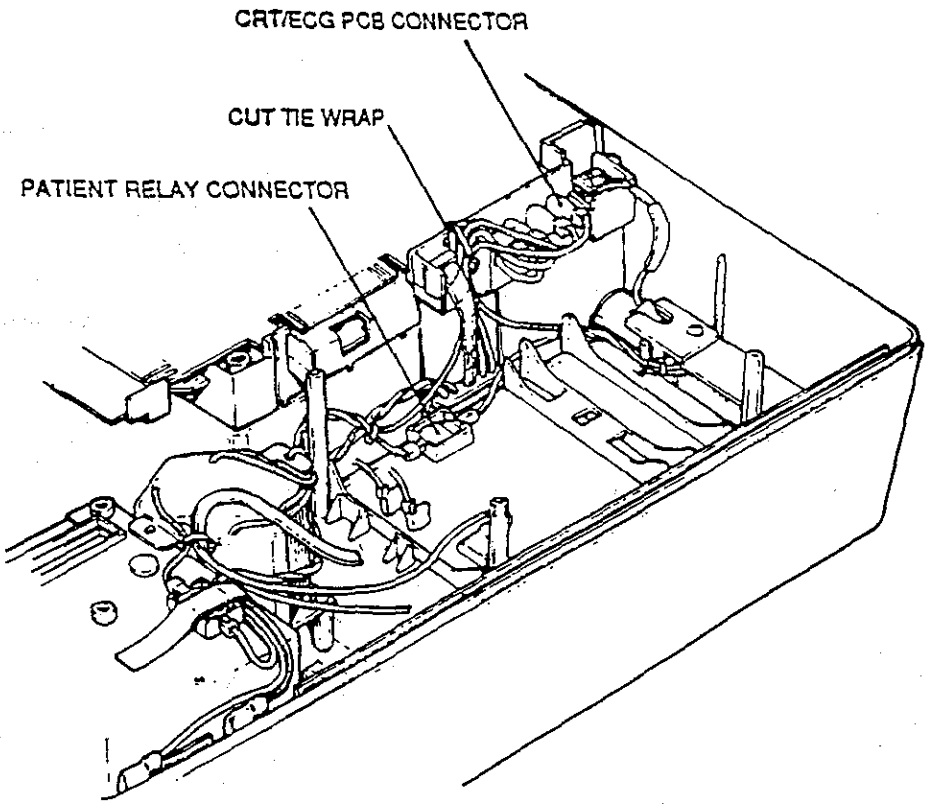
INSTALLING THE ECG CONNECTOR ASSEMBLY

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Reverse steps 3 through 7 above.
2. Install the HV capacitor as shown on page VII-29.
3. Install the lower housing as shown on page VII-5.


SCREW (1 PLACE)
CHOKE RETAINER
PACE/DEFIB PCB
3 POSITION CABLE
CHOKE ASSY


CRT/ECG PCB CONNECTOR
CUT TIE WRAP
PATIENT RELAY CONNECTOR

18. REMOVING THE CHOKE

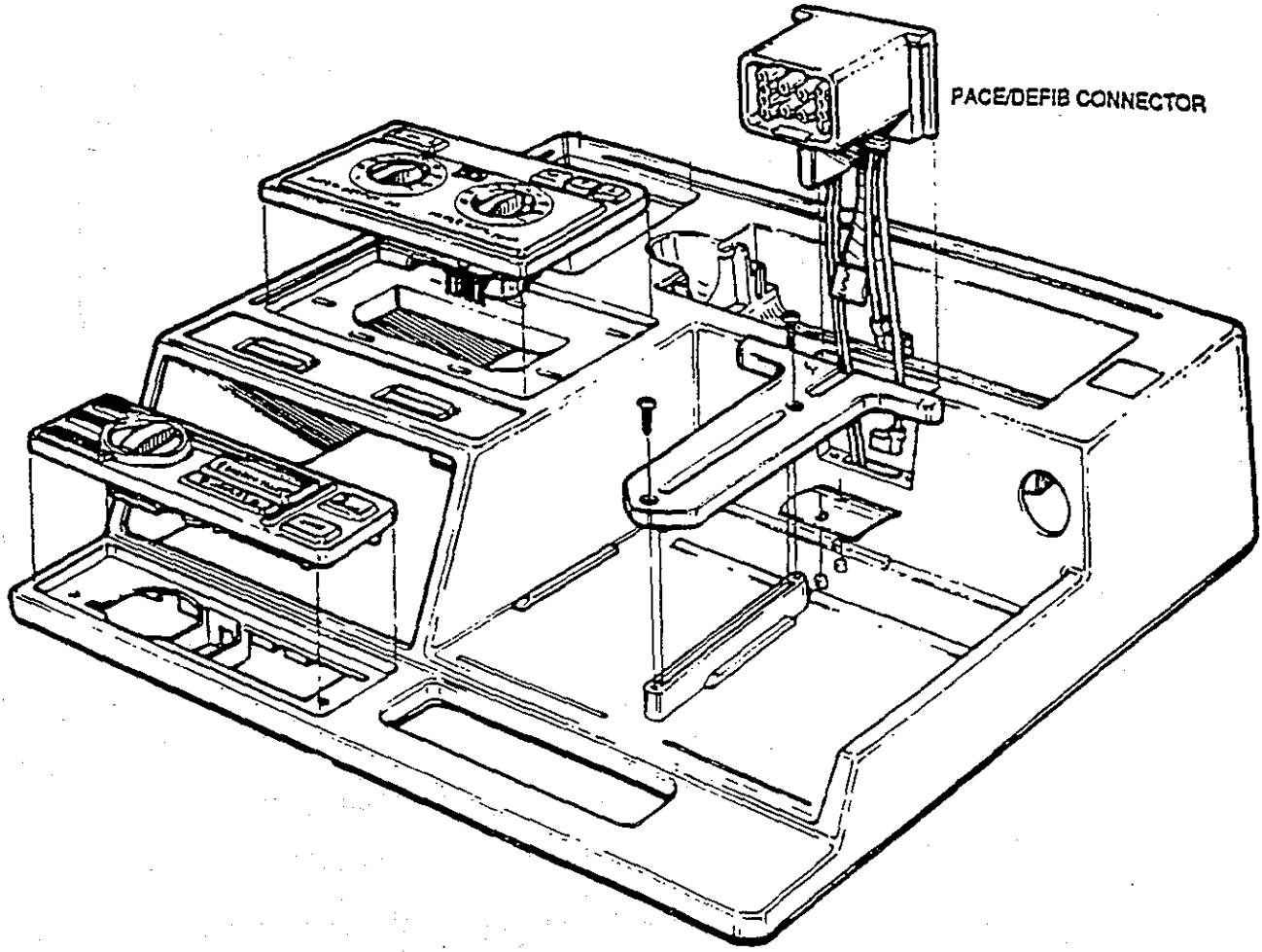
TOOLS REQUIRED:
- Standard phillips head screwdriver
- X-Acto Knife

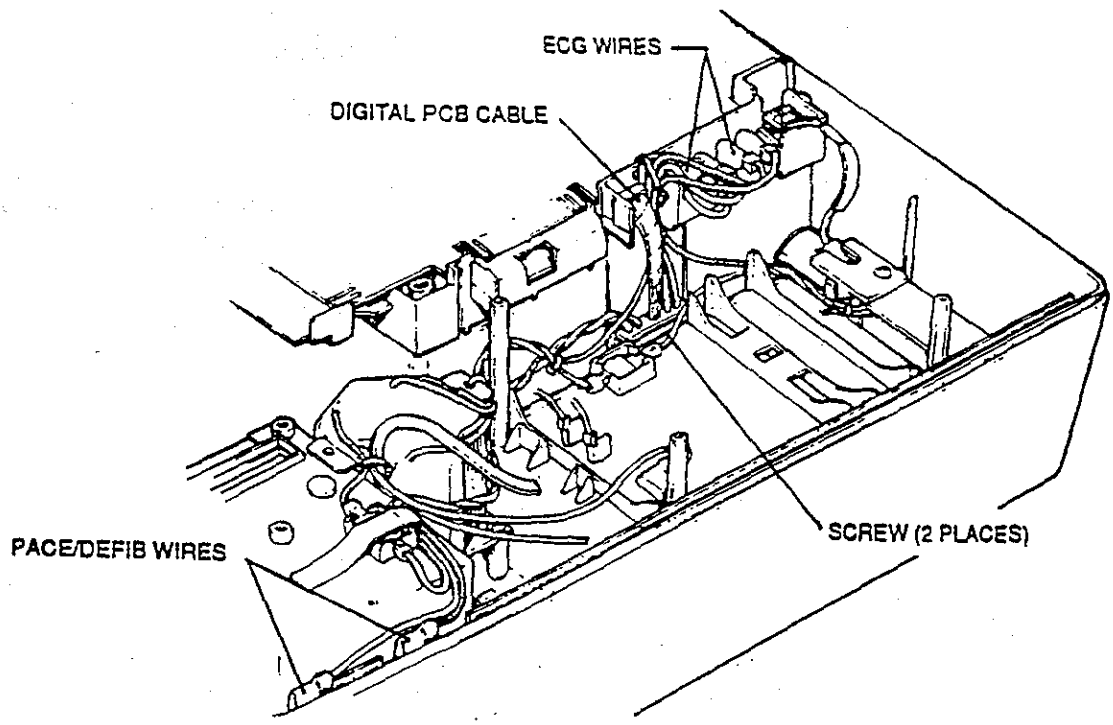
1. Remove the lower housing as shown on page VII-5.
2. Remove the high-voltage capacitor as shown on page VII-29.
3. Remove the screw securing the choke retainer.
4. Remove the choke retainer.
5. Cut tie wrap securing the wires to the PCB chassis.
6. Disconnect the wire connected to the CRT/ECG PCB.
7. Disconnect the wire connected inline to the patient relay.
8. Disconnect the cable connected to the pace/defib PCB.
9. Lift the choke out of the upper housing by pulling straight up.

INSTALLING THE CHOKE

TOOLS REQUIRED:
- Standard phillips head screwdriver
- Tie wrap

1. Reverse steps 3-9
2. Install the high-voltage capacitor as shown on page VII-29.
3. Install the lower housing as shown on page VII-5.


PACE/DEFIB CONNECTOR


ECG WIRES
DIGITAL PCB CABLE
SCREW (2 PLACES)
PACE/DEFIB WIRES

19. REMOVING THE PACE/DEFIB CONNECTOR

TOOLS REQUIRED:

- Standard phillips head screwdriver
- X-Acto Knife

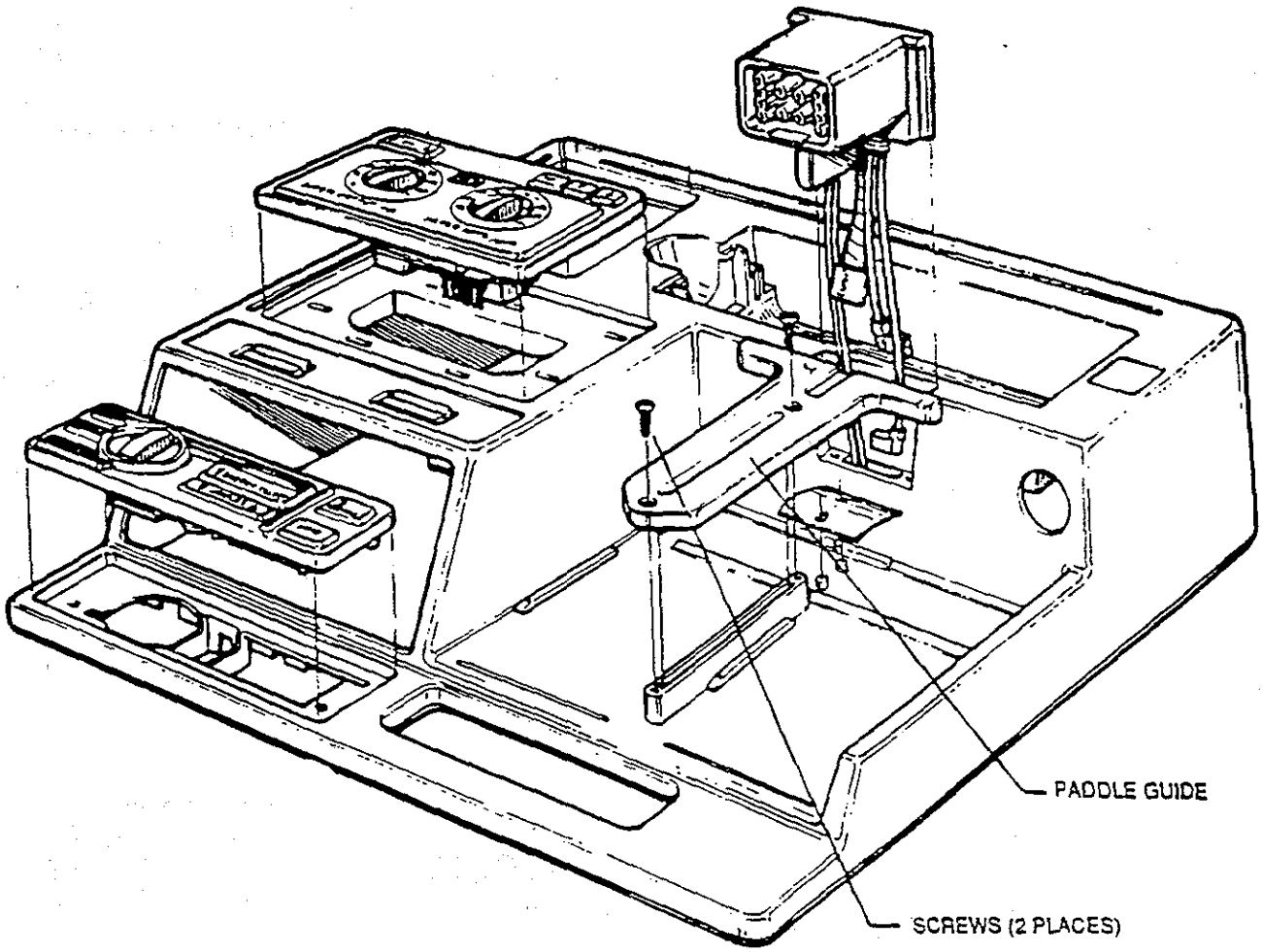
1. Remove the lower housing as shown on page VII-5.
2. Remove the high-voltage capacitor as shown on page VII-29.
3. Disconnect the digital PCB cable. (Connector lock is on the bottom of the connector.)
4. Disconnect the 2 ECG/CRT PCB leads at the rear of the PCB.
5. Disconnect the 2 pace/defib PCB leads at the pace/defib PCB.
6. Cut the tie wrap (2 places) to release the leads.
7. Remove the 2 (two) screws securing the pace/defib connector to the unit.
8. Remove the connector from the top of the unit.

INSTALLING THE PACE/DEFIB CONNECTOR

TOOLS REQUIRED:

- Standard phillips head screwdriver
- Tie wrap

1. Reverse steps 3-8
2. Install the high-voltage capacitor as shown on page VII-29.
3. Install the lower housing as shown on page VII-5.


PADDLE GUIDE
SCREWS (2 PLACES)

20. REMOVING THE PADDLE GUIDE

TOOLS REQUIRED:

- Standard phillips head screwdriver

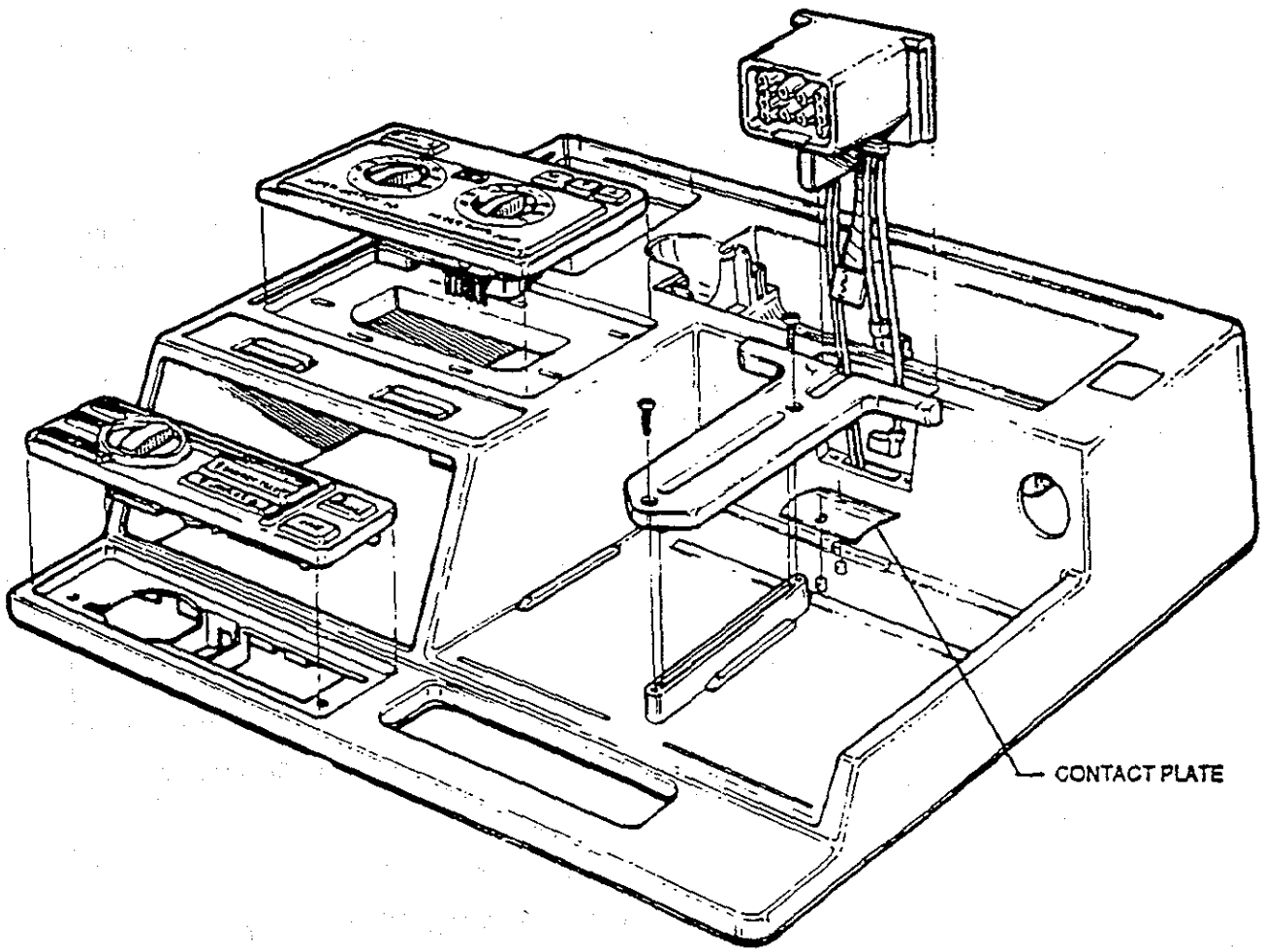
1. Remove the lower housing as shown on page VII-5.
2. Remove the HV capacitor as shown on page VII-29.
3. Remove the 2 screws securing the pace/defib connector as shown on page VII-41 and pull the connector partially out of the unit. (It is not necessary to disconnect any of the pace/defib connector wires.)
4. Loosen and remove 2 (two) screws securing the paddle guide.
5. Remove paddle guide.

INSTALLING THE PADDLE GUIDE

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Reverse steps 3 through 5 above. (Check that the Paddle Contact Plate is installed correctly. See page VII-45.)
2. Install the HV capacitor as shown on page VII-29.
3. Install the lower housing as shown on page VII-5.


CONTACT PLATE

21. REMOVING THE CONTACT PLATE

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Remove the lower housing as shown on page VII-5.
2. Remove the HV capacitor as shown on page VII-29.
3. Remove the 2 screws securing the pace/defib connector as shown on page VII-41 and pull the connector partially out of the unit. (It is not necessary to disconnect any of the pace/defib connector wires.)
4. Loosen and remove 2 (two) screws securing the paddle guide.
5. Remove paddle guide.
6. Remove contact plate.

INSTALLING THE CONTACT PLATE

TOOLS REQUIRED:

- Standard phillips head screwdriver

1. Locate the contact plate over the locator pins, convex side up.
2. Install paddle guide per instructions as shown on page VII-41.
3. Install the HV capacitor as shown on page VII-29.
4. Install the lower housing as shown on page VII-5.

SECTION VIII

REPLACEMENT PARTS

This section contains a listing of the replacement parts available for the PD™ 1400-series devices.

Replacement parts may be ordered through your sales representative, distributor, or directly from ZOLL Medical Corporation. When ordering parts, please provide the following information:

- the PD™ 1400-series device's model and serial number
- Field Replaceable Unit part number
- Description of the replacement part

> ZOLL reserves the right to substitute different parts to reflect modifications and improvements in PD™ 1400-series circuitry and design.

To order directly from ZOLL Medical Corporation, address your request to:

ZOLL Medical Corporation	Telephone	(800) 348-9011
32 Second Avenue		(617) 229-0020
Burlington, MA. 01803	FAX	(617) 272-5578
Attention: Technical Service Department		

Current replacement part pricing is available from your sales representative or distributor. You may also contact ZOLL's Technical Service Department for price quotations.

FIELD REPLACEABLE UNITS

Description		Part Number
Pacer/Defibrillation Circuit Board Assembly		9301-0100
Digital Circuit Board Assembly		9301-0138
Power Supply Assembly		9301-0102
Analog Shielded PCB Assembly		9301-0097
Analog PCB Assembly		9301-0136
High Voltage Supply Assembly		9301-0104
Battery Charger Circuit Board Diagram		9301-0012
Pacer Control Assembly,	PD 1400, PD 2000	1004-0012
	D 1400, D 2000	1004-0089
Main Control Assembly	D 1400,	1004-0086
	D 2000,	1004-0087
	PD 1400,	1004-0013
	PD 2000,	1004-0085
Display Control Assembly	D 1400, PD 1400	1004-0090
	D 2000, PD 2000	1004-0088
Patient Relay Assembly		1004-0019
Patient Connector Assembly		1004-0011
ECG Connector Assembly		1004-0104
Defibrillator Capacitor Assembly		9126-0002
Inductor Assembly		9140-0050
Recorder Assembly		9350-0004
Main Cable		9500-0202
Battery Cable		9500-0204
Upper Housing Assembly		9310-0200
Lower Housing Assembly		9310-0201
Charger Housing Assembly		9310-0150

Charger Bottom Assembly 9320-0104

Charger Transformer.....9141-0023

CRT Tube Yoke Assembly.....1004-0016

OTHER COMMONLY USED PARTS

Description	Part Number
Cover Screws	0163-0911
Copper Tape	0550-0037
Mylar Tape	0550-0125
Shields, Analog	9330-0081
Shields, Digital	9330-0073
Recorder Gasket	9310-0206
CRT Window	1004-0026-01
CRT Window Gasket	9161-0026-01
CRT Window Rubber Bumpers	9330-0062
Lower Housing Gasket	9161-0250
Defib Paddle Guide/Retainer, plastic	9310-0207-99
Defib Paddle Guide screws	0163-1231
Paddle Well Shield	9330-0082
Membrane, Module Port	9330-0074
Beeper Seal	9330-0067
Gasket Drain (Recorder and Battery)	9330-0060